

# AMERICAN ARTISAN and Hardware Record

Vol. 87. No. 18.

620 SOUTH MICHIGAN AVENUE, CHICAGO, MAY 3, 1924.

\$2.00 Per Year

## THE SUPER-SMOKELESS FURNACE

### *What Is Desirable for the User Is Best for the Dealer to Sell*

**SUPER-SMOKELESS Furnaces** are desirable from the standpoint of the user. They burn soft coal smokelessly, utilizing the smoke and soot as fuel. They require less coal and generate more heat than other furnaces of equal size firepot. They have met with a most cordial reception by home owners.

**THEIR SMOKELESS OPERATION** and increased heating efficiency are due to all the combustible gases being utilized as fuel. In other furnaces these remain unburned and are released as smoke up the chimney. In SUPER-SMOKELESS Furnaces additional oxygen combines with the combustible element and produces clean, hot flames which entirely consume the heavy smoke and soot of soft coal.

**THOUSANDS ALREADY IN USE** in all soft coal sections, giving entire satisfaction. Owners recommend them to their friends and the demand grows with every installation. Satisfied customers bring increased sales and bigger business. The SUPER-SMOKELESS Furnace is best for the dealer to sell because it is popular with the actual users—they are your most valuable advertisement.

**DEALERS ARE ENTHUSIASTIC** over the response of the public after seeing this clean smokeless furnace. We can help you put on a demonstration that will prove the claims for smokeless operation and exceptional heating capacity with any grade of coal. The extremely simple and extra rapid erection also appeals to practical furnace installers.

#### **SPECIAL PROPOSITION:**

SUPER-SMOKELESS Furnaces are distributed through exclusive dealers and offer a wonderful business-building proposition. Send for complete information about SUPER-SMOKELESS Furnaces; let us tell you what other men have accomplished in territories like your own. You can forget competition and land the cream of the warm air heating work all year round. Just mail a post card.

**UTICA HEATER COMPANY, Utica, N. Y.**

218-220 West Kinzie Street, CHICAGO, ILL.



## THE SUPER-SMOKELESS FURNACE

# 10,000 SIMPLEX



## LEVER SHAKER FURNACES

PIPE—PIPELESS

Will be sold in 1924 from  
the Atlantic to the Pacific.

### Why?

Because they are made on a quality  
basis but sold at a quantity price.

### SIMPLEX FURNACES

Measure and weigh more than the  
ordinary competitive type furnaces,  
size for size. In other words,

**YOU GET MORE CAPACITY**  
for your money when you buy

### SIMPLEX FURNACES

That is why **SIMPLEX** Installers  
are doubling their business.

**FILL IN AND MAIL THIS COUPON TODAY**

Simms Foundry Corporation  
Box 106  
Racine, Wisconsin

Kindly send full particulars about your Simmplex furnaces and agency proposition.  
We expect to sell in 1924 \_\_\_\_\_ furnaces.  
(state quantity)

Signed \_\_\_\_\_

Per \_\_\_\_\_

Address \_\_\_\_\_

Founded 1880 by Daniel Stern

Thoroughly Covers  
the  
Warm Air Furnace  
Sheet Metal, Stove  
and  
Hardware Interests

# AMERICAN ARTISAN and Hardware Record

Address all communication  
and remittances to  
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### DO IT THE COMMON-SENSE WAY!!

You'll agree that the common-sense method of advertising is to find out who your prospects are and what fields they are in, and then to advertise to them directly through the specific business paper serving their interests.

This method has been successfully used for nearly three-quarters of a century by more manufacturers than have employed any other method of publicity.

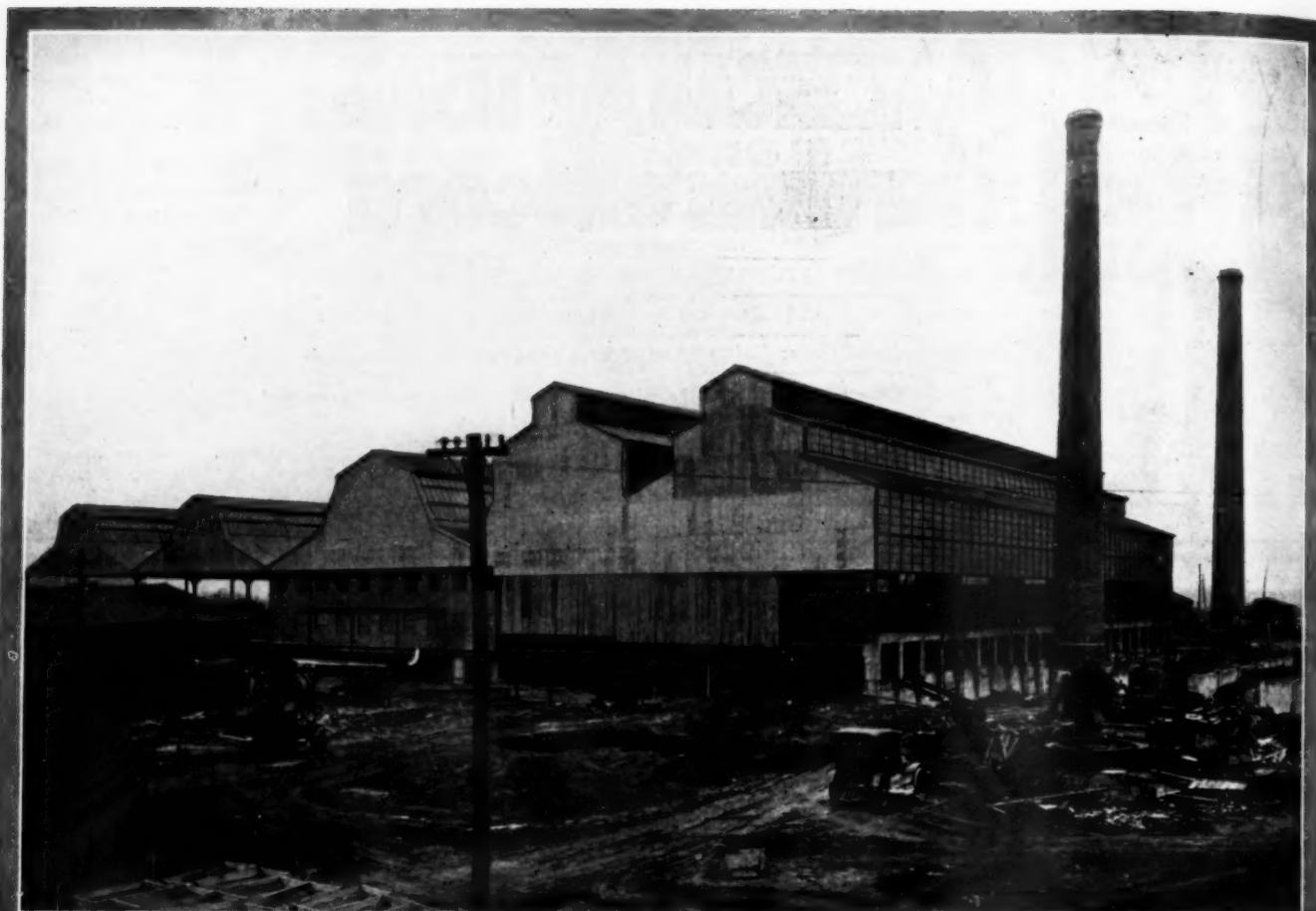
Equally true is the fact concerning the seeking of reliable information about the particular field in which you are engaged.

The editorial columns of AMERICAN ARTISAN are devoted to the development and perpetuation of the Warm Air Heating, Stove and Range, and Sheet Metal industries. Its readers are cordially invited at all times to use this common-sense method of obtaining the advice they need for the successful conduct of their businesses.

Answers to all questions will be held strictly confidential if so desired by the sender. If no mention is made to the contrary, questions and answers will be published in the various departments of AMERICAN ARTISAN.

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 46-48-50





Illinois Glass Company's Plant at Bridgeton, N. J. Roofing and Siding Are ARMCO-Ingot Iron.  
William P. Cameron Engineering Company, General Contractors, Philadelphia, Pa.

***"Its small additional cost  
is money well invested"***

SINCE 1912 the Illinois Glass Company with plants at Alton, Illinois and Bridgeton, N. J., has used galvanized ARMCO-Ingot Iron for roofing and siding.

The roofs are subjected to the attacks of different chemicals, including sulphur fumes. But Ingot Iron has far outlasted other sheet metal used on the same building and is still in excellent condition.

No wonder they say: "Its small additional cost is money well invested."

Distributors in all principal cities.

*Write for interesting booklet:  
Building a Business with Iron that Lasts*



**ARMCO** **INGOT**  
**IRON**

TRADE MARK

The American Rolling Mill Co., Middletown, Ohio



# ***Luck Is Not Prime Factor in Success— It Takes Good Judgment and Plenty of Ginger.***



**S**IXTY years ago there were about a dozen dry goods stores in the downtown district of Chicago, which is now known as "the Loop."

Only one of these stores is in existence today.

Thirty years ago, there were at least three good-sized wholesale hardware houses near State and Lake streets.

Today there is only one.

It may have been a lucky circumstance that placed the sixty-year old dry goods store on Lake street, but it was judgment and aggressiveness that made this store grow into the greatest retail establishment in the world.

It may have been through a piece of luck that the wholesale hardware house was located in the center of downtown Chicago, but it was good management in buying and aggressiveness in selling that made this concern one of the half-dozen big hardware distributors in the United States.

It may be just a bit of luck that got somebody started selling stoves and furnaces in a furniture store in Paris, Illinois, some years ago, but it took considerable good business sense and lots of hard work (intelligently planned) to build that branch up to a \$50,000 volume in a town of less than eight thousand people.

It may have been nothing more than a little hard luck that caused a Nebraska stove and hardware dealer to write his stove manufacturer to take back six ranges, as he could not sell them; but would you say that it was if you should learn that when he was instructed to ship them to another dealer not more than ten miles away, he went ahead and sold them and got the money, so that he could pay his bill?

It may have been the poor crops—and that is part of what is called luck—that made

stove dealer after stove dealer in a certain section of Minnesota tell the salesmen that there was no use in going after stove business, that the farmers had no money and, therefore, could not pay even if they might be induced to buy the stoves the dealers had on their floors.

But what would you say if these same dealers, within a month after that statement, actually did sell not only what they had on hand, but were forced to order more so that their customers' demands could be filled—the change of attitude being caused by a mere "stove peddler" whose sales, by the way, ran up to two carloads in the same section at the same time?

We have passed the point where a man who is in the business of selling can succeed by simply caring for the customers that come to him without active solicitation of some sort.

And there is nothing to the theory that it is undignified for a business man to ask for the patronage of his fellow citizens. In fact, there is every reason why he should, and the only real reason why he does not follow that perfectly natural road to sales is that he does not possess that most necessary element of business ability—a fair amount of aggressiveness, coupled with an average portion of intelligence of course.

Luck is blamed for many business failures when the real cause of the failure lies within the man himself, in his lack of backbone, "gumption," "ginger" or "pep." Sometimes a "kick on the shins" will get his "dander" up, but usually he will just howl and call it "bad luck."

\* \* \*

The extra dividend which has just been declared by the U. S. Steel Corporation means business will be good for all of 1924 for those who go after it.

## Random Notes and Sketches.

By Sidney Arnold

Lots of stuff has been written and published about the need for and desirability of a more-than-common-school education, and we are just as far as we ever were in the matter of decision.

A well-known advertising man has recently made an investigation by checking 665 biographies of men who became prominent in their respective fields—prominent enough, at any rate, to have biographies published about their life's history and business activities.

He found that the heads of fourteen great industrial corporations had no college education, while nine possessed degrees. He found that the three richest men in the world started their careers at the age of sixteen years or less. Douglas, the shoeman, started to work at thirteen, as did also Duke, the tobacco king; Vail, the telephone prince; Willys, the automobile manufacturer; Archbold, John D.'s partner in oil.

Among others who had to begin earning their livelihood at sixteen are John Wanamaker, Julius Rosenwald, James A. Farrell, the steel man, and his side kick, Charles M. Schwab.

However, who is there to claim that these men would not have been still more successful if they had had the good fortune to receive what we are accustomed to call "a higher education"?

\* \* \*

Somewhere, somebody conceived the notion that farmers quit buying when the warm weather comes. I notice, however, that quite a number of live advertisers do not subscribe to that idea; at least their advertising schedules would indicate that they look for a fair average of returns from their advertisements during the summer months.

And the other day I found a "graph" in *Printers' Ink* that goes to prove the fallacy of that notion, for

while the last four months of the year naturally show the heaviest purchases by the farmer, May, June,

### In Memoriam



### Daniel Stern

Founder

American Artisan  
and

Hardware Record

April 26, 1859

May 4, 1920

July and August all show sales above the average.

My friend George H. Dietz, Secretary of the Nebraska Retail Hardware Association, says a good-sized mouthful when he voices his opinion in the following:

"There is no substitute for work. If somebody tells you he has found something 'just as good,' you better take it with a grain of salt, nay, perhaps, two grains of salt. Yes, we know—there used to be a time when to say that a man worked for a living was to insult him. Now it

is more of an insult to presume he doesn't work.

"Every invention, every new comfort, every progressive step is the result of somebody's labor—90 per cent perspiration and 10 per cent inspiration still continuing as an inflexible rule for success in any undertaking.

"To be sure, it's nice to sit around and dream, and we like to smoke good cigars just as well as the next fellow, and try to find a short cut to the royal road to ease. But so far we have been unable to find any such road."

\* \* \*

No one should ever be so busy that he cannot take time to maintain friendly relations with his boyhood friends—even if he may have "grown" beyond their sphere. The following poem emphasizes the result of such neglect very tersely and pointedly:

#### Around the Corner.

Around the corner I have a friend,  
In this great city that has no end;  
Yet days go by and weeks rush on,  
And before I know it a year is gone,  
And I never see my old friend's face;

For life is a swift and terrible race.  
He knows I like him just as well  
As in the days when I rang his bell  
And he rang mine. We were  
younger then.

And now we are busy, tired men—  
Tired with playing a foolish game;  
Tired with trying to make a name.  
"To-morrow," I say, "I will call on  
Jim,

Just to show that I'm thinking of  
him."

But to-morrow comes and to-morrow goes;  
And the distance between us grows  
and grows.

Around the corner!—yet miles  
away . . .

"Here's a telegram, sir." . . .  
"Jim died today!"

And that's what we get—and deserve in the end—

Around the corner, a vanished  
friend.

# L. W. Millis Explains Heat Absorbing and Reflecting Properties of the Various Metals.

## Warm Air Pipe Insulators Should Be of That Type of Non-Inflammable Material Containing Air Spaces.

Written Especially for AMERICAN ARTISAN by L. M. Willis, Security Stove and Manufacturing Company, Kansas City, Missouri.

THE subject of insulation of heat is of vital importance in the warm air heating industry. A proper understanding of the correct methods of insulating is invaluable and cannot be neglected without a serious loss to the individual and the industry in general.

The following lecture given by L. W. Millis on the subject of insulation is enlightening and will prove intensely interesting and profitable to all who read it:

I suppose that when a furnace man thinks of heat insulation he associates it with asbestos paper.

piece of tin or galvanized iron between exposed woodwork and a smoke pipe (black iron should not be used for that purpose). The term insulation, however, is generally intended to apply to those places where something is put on a hot surface to prevent the heat from escaping.

Of course, various substances offer different degrees of heat resistance. Among the best insulating substances we find a great many that are inflammable and, therefore, useless, so far as furnace work is concerned. Feathers are a good

fibers and animal fibers are often used; in fact, hairfelt is one of the best insulating materials, but cannot be used in warm air furnace work.

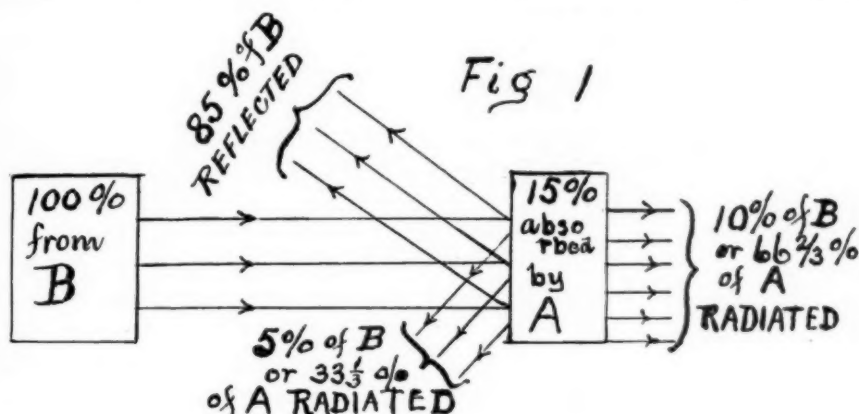
For warm air pipes ranging from 100 degrees to about 250 degrees, materials containing air spaces made of asbestos paper or of other non-inflammable substances are often used.

In order to get a fair idea of how to prevent unreasonable heat loss in a warm air job, it would seem that we must know something about the qualities of various substances, such as reflection of heat, conduction of heat and absorption of heat.

We must learn to think of heat as being reflected or absorbed by a substance just as we see light reflected. Light reflected from a polished bright surface might dazzle your eyes, but a ray of light (or heat) shining on soot (lamp black) would not be reflected at all. Therefore, soot on the inside of a radiator partly insulates the radiator, but a tin lining in a casing would help insulate the casing by reflecting the heat rays back again to the castings they came from. That would not be good for the castings.

Try holding a piece of tin and a piece of black sheet iron similar in size near a source of heat and notice how much hotter the black iron gets than the tin. The absorbing power of the black iron is about twelve times that of the tin. So we use black casing linings and place them so the air rising around them can wipe the heat from both sides and carry the heat upstairs.

We should get clearly in mind the idea of a substance absorbing and then radiating heat away from it and then compare it with a substance that does not absorb so much, but reflects the heat away from it.



Illustrating Clearly What L. W. Millis Means by Heat Absorbing and Reflecting Properties.

There are really many sides to this subject. We call it insulation whenever we prevent heat from going where it is not wanted. We have previously spoken of putting black linings inside of furnace casings, in order that they would gather up part of the radiant heat. Such linings should have a space of about one inch between the lining and the casing, in order that the rising air can have free access to all the warm surfaces, giving it an opportunity to absorb heat and carry it away.

We can think of that as insulation obtained through convection. The same thing is true when we put a

illustration of this. You use sand on top of a canopy. The material of which sand is composed is not a very good insulator, but air in very small spaces is good; therefore, sand is rated as good insulation.

The value of a thing as an insulator of heat depends primarily on three things: First, the amount of voids or airspaces contained in the substance; secondly, the heat conductivity of the material; thirdly, the reflecting qualities of the material.

If insulation is desired on low temperature work, like refrigeration work for example, then organic materials such as wood, cork, vegetable



Two things may have the same temperature, but one may *radiate* more heat away from it than the other. This brings us to a subject that is puzzling a lot of furnace men; namely, if an uncovered tin pipe is hotter to the hand than a pipe covered with one coat of 10-pound asbestos paper, why doesn't the hot tin pipe heat the basement the most?

That is a live question. Let us look at Figure 1.

"A" is a substance receiving a group of 100 per cent heat rays from "B." When the rays strike "A," 85 per cent of them are reflected back from "A" and the remaining 15 per cent is absorbed by "B." That looks all right until a second group of 100 per cent rays leave "B." Then that 15 per cent absorbed by "A" must hustle along and make room for the second lot of 15 per cent. Let us now think only of that 15 per cent. If the surfaces of the object "A" are alike, each would radiate the same amount, but if one side is a better radiator of heat (now be sure to get that), if one side is of such a nature that it radiates more heat than the other side, each will radiate different amounts of heat. In Figure 1 we have shown 10 per cent of the 100 per cent, which equals  $66\frac{2}{3}$  per cent of the amount absorbed in "A" as leaving one side and  $33\frac{1}{3}$  per cent radiating from the other side.

Here is a wire frame holding a piece of tin, a piece of black iron and a piece of steel nickle-plated on one side. Hold it close to this fire and then feel both sides of each; then hold your hand a little away from each and you will see the truth of the illustration in Figure 1.

Let us repeat. The amount of heat *radiated* from a substance is not necessarily indicated by its temperature. Remember that.

Now let us go to the basement and run a tin warm air pipe stripped with asbestos at the joints on part of its length and part of it covered with one coat of 10-pound asbestos paper and put seven coats of asbestos on a part of it. Now put your hand on the bare tin. Pretty hot, is it? Put your hand on the one coat

of asbestos. It doesn't feel as warm as the tin and the seven-coated part feels still cooler. That looks like it would be hard to convince a customer that if all his basement pipes were of the hot tin variety, that his basement would be cooler than if they all had a coat of cooler (?) asbestos paper.

Kent's table of absorption and reflection gives the following:

Substance.

Lamp black .....	100
Writing paper.....	98
Glass .....	90
Polished bright cast iron.....	25
Polished wrought iron.....	23
Polished steel .....	17
Zinc .....	18
Tin .....	15
Bright brass.....	7
Gold on steel.....	3
Bright silver .....	3

Let us take another look at that Figure 1. You see that one side *radiates* or sends more heat away from it than the other side, although the temperature of "A" itself may be the same throughout.

All right, let us try one more suggestion. Place a thermometer about two inches away and opposite each of the three kinds of surface. Note that the one-coat part thermometer registers 90 degrees, while the bare tin and the seven-coated tin register very nearly alike, or 85 degrees.

Again, remember that the heat that *leaves* the surface is what heats the basement. It is almost certain that asbestos coverings on cellar runs will some day be obsolete. The University of Illinois publishes a chart proving the heat loss very conclusively.

Quite often someone asks us to put a coat of 10-pound asbestos on the casing and canopy of a furnace because it has become dingy in appearance.

What is your experience?

Mr. Ullom: "I think that the heat loss would increase if we cover it. I always try to sell them air cell asbestos from the top of the ashpit up and then cover all, including the

casing below the top of the ashpit, with 10-pound paper. The one coat on the lower part of casing helps to cool the air at the bottom of the furnace and improves the air flow to the furnace."

Question by Mr. Millis: "How many of you follow that system in reference to air cell?"

Mr. Jones: "I do, if my work ticket so states. I always thought

Radiating or absorbing power.	Reflecting power.
100	0
98	2
90	10
25	75
23	77
17	83
18	81
15	85
7	93
3	97
3	97

it was left off at the ashpit to cheapen the job. I see now where I am wrong."

Mr. Richardson: "I think I have had more trouble about that item than most anything."

Question: "Can anyone here say from his own experience that air cell at ashpit is a detriment?"

Mr. Ullom: "I have often noticed that air cell opposite a hot pot is cooler to my hand than air cell opposite the ashpit. That always struck me as strange."

Mr. White: "I noticed a job yesterday where the air cell went all the way down. The casing was cool near center and hot at ashpit."

Mr. Hartnett: "I had a work ticket today to take air cell away from casing at ashpit. Before I took it off, it felt hotter to my hand than any part of the casing. After I took it off, it cooled down considerably. No other part of the casing was very hot before, so I cannot say that the casing was cooled other than at the ashpit. The same job called for bricks to be put inside of the ashpit on account of heat from an oil burner in the ashpit. The brick insulation in the ashpit cooled the casing at the ashpit still more,

and also seemed to cool the entire casing. The lady in the house said the heat was coming in rooms much better."

"Thank you, Mr. Hartnett. Pretty good evidence, it seems to me."

All right, men, try to remember that we are not as much interested in saving 50 cents on air cell as we are in heat loss. Leave the air cell off opposite the ashpits.

Question by Mr. Richardson: "I noticed on an order lately, fifty bricks ordered to line an ashpit. What was that for?"

Answer: "The furnace had an oil burner installed of the type that has a pot below the level of the ashpit top. The air was flowing to furnace badly, because the ashpit was quite hot. We put a row of bricks around inside of the ashpit and the air flow improved. That is the job Mr. Hartnett just referred to."

Question: "Mr. Hartnett said he could have put the bricks outside of the ashpit easier. Why not?"

Answer: "That would tend to prevent the heat from leaving the ashpit casting and would probably lead later to the destruction of the ashpit. Ashpits are not as heavy as pots and should not be used as a primary heating surface. That brick lining comes under the head of insulation. Some time ago we discussed the value of ashes on top of grates to protect them from the intense heat of the fire. That is a form of insulation also."

"Insulation of heat, so far as a warm air furnace man is concerned, is not as large a problem as in hot water and steam work, or in refrigeration. But the matter of reflecting, absorbing and radiating heat rays is of great importance. Please give it close attention.

## R. J. Schwab & Sons Boost Warm Air Heating Industry at Milwaukee Exposition.

*Distribute Warm Air Heating Primer to Visitors of "Own Your Own Home" Exposition Held in Milwaukee.*

**R. J. SCHWAB & SONS** Company, 283 Clinton Street, Milwaukee, Wisconsin, recently gave the warm air heating industry a boost by way of some wholesome publicity.

The occasion was the Milwaukee "Own Your Own Home" Exposition. The method was a small GiltEdge Primer—a little handbook of questions and answers which was given out to each person passing the R. J. Schwab booth.

The primer contained the following questions and answers:

Ques.—What is a furnace?

Ans.—A furnace is the heart of a warm air heating plant, and is usually located in the basement of the building which it heats.

Ques.—What are the essential parts of a warm air heating system?

Ans.—1. The furnace, or heater, itself. 2. The casing which surrounds it. 3. The warm air flues and pipes leading from the casing

to the rooms which are to be heated. 4. The registers through which warm air enters the rooms. 5. The cold air return, or intake, through which cold air is introduced into the space inside the casing. 6. The water pan or humidifier.

Ques.—What are the different kinds of heat?

Ans.—1. *Radiant* heat thrown off directly by heated surface, such as a stove. 2. *Conducted* heat transmitted from one part of the heated object through the rest of its parts. 3. *Convected* heat, in which the air passing the heated surfaces rubs the heat off of them and carries it to the rooms.

Ques.—How does a furnace heat a building?

Ans.—By *convection*. Burning fuel in the firepot of the furnace first heats the heating surfaces (firepot, body, radiator, ashpit, etc.) and the air in the space within the casing obtains the heat by convection and rises through the pipes,

entering the rooms through the registers.

Ques.—Why is there a cold air return?

Ans.—As the air in the room becomes cooler, it also becomes heavier, and drops to the floor, flowing through the cold air spaces into the cold air returns and back to the furnace to be reheated and recirculated.

Ques.—Why is this system sometimes called a gravity system?

Ans.—Because the difference in weight between the warm, lighter air and the cold, heavier air causes the system to operate; in other words, the weight of the cold air in the cold air returns really pushes the warm air in the casing and warm air pipes up into the rooms.

Ques.—Why is air moistened?

Ans.—Moist air is healthful—dry air is not. The water pan or humidifier supplies this moisture. The water is evaporated and absorbed by the air as it passes through the casing.

Ques.—What are the most essential features of an efficient and economical furnace?

Ans.—1. A large amount of heating surface, particularly in those parts which produce the higher percentages of effective heat. 2. Ample free air space. 3. Correct sized casings, so proportioned as to provide for ample air movement at the most effective rate. 4. Correct fire travel to provide even distribution of heat within the casing without waste of fuel. 5. A grate construction that insures complete combustion of fuel. 6. Dependable, gas-tight joints between the several parts.

Ques.—Where does a furnace get its heating efficiency?

Ans.—The prime factors in determining the heating power or efficiency of a furnace are not firepot measurement, as generally supposed, but: 1. *Grate area* to burn the amount of fuel to produce the required amount of heat for the building. 2. *Heating surfaces* to transmit this heat to the surrounding air to be conducted by this means to the rooms to be heated.

3. Free *air space* to pass the amount of air necessary to carry this heat.

Ques.—Does top diameter of a firepot determine the heating efficiency of a furnace?

Ans.—Emphatically—No! While it is a common practice to use the top diameter of the firepot as a basis for telling the size of furnace needed for a given installation, this is unsound, unscientific and absolutely unreliable. Grate area and heating surface constitute the correct guide.

Ques.—Why is a straight firepot better than a firepot with sloping sides?

Ans.—1. The straight firepot has a larger capacity for a given grate area. 2. The straight construction lets enough oxygen flow through for proper combustion (the sloping firepot lets the fire burn unevenly, so that some of the gases and fuel are only partly consumed). 3. In firepots with sloping sides, ashes accumulate along the walls, reducing heating surface where it is most effective, as well as fuel capacity.

Ques.—Why should the radiator of a furnace be large?

Ans.—So that it can transmit more heat to the surrounding air.

Ques.—What grate construction is best?

Ans.—One in which the grates are easily and uniformly shaken, but which does not permit the accidental dumping of live fuel into the ashpit.

Ques.—Why is a high ashpit desirable?

Ans.—To make it easier to remove ashes, and to prevent burning out of grates.

Ques.—What about furnace doors?

Ans.—The doors of a furnace should swing easily and close tightly. They should also be handy to get at and provide easy access to the parts to which they open.

Ques.—Is it necessary with a warm air furnace that gases sometimes come up into the room through the warm air pipe?

Ans.—Not if the furnace is of proper construction, and if the

joints are of proper gas-tight construction, and a good grade of cement is used in packing them.

Ques.—Is "correct installation" important?

Ans.—Absolutely. No matter how good a furnace may be, it will not heat efficiently or economically unless it is properly installed.

Ques.—What size of furnace should be installed?

Ans.—This depends upon the size, location, architecture and construction of the building. It is better to have the furnace a little larger than is absolutely necessary than so much smaller than it should be that it has to be constantly "forced" to keep the rooms comfortable.

Ques.—Is there a reliable Code which I can ask to have followed when installing my furnace?

Ans.—Yes! Write into your specifications that the furnace installation must be in accordance with the Warm Air Heating Code of the National Warm Air Heating

& Ventilating Association. This Code has been adopted by the American Society of Heating and Ventilating Engineers, and all of the allied trade associations, and if followed will give you a dependable installation.

Ques.—How much fuel should a furnace burn?

Ans.—That depends on the kind of furnace and the kind of installation. A good installation and a good chimney will pay for the furnace.

Ques.—Can I install an oil burner in my furnace?

Ans.—Yes, you can, or you can burn coke, hard coal, soft coal, or wood or almost any fuel.

Ques.—What should I pay for my furnace?

Ans.—Enough to get a good one. Cheap furnaces that have to be constantly repaired and must be thrown out in a few years' time are a poor buy at any price. You are buying heat and comfort, not castings and casings.

## *Whipp Explains Some of the Common Faults in Fan Design and Application.*

*Says Many Engineers Believe It Only Necessary to Increase Speed of Fan to Create Proper Suction.*

THIS is the third of the series of articles comprising the address on creating proper fan suction, by Frederick G. Whipp. The first and second instalments appeared consecutively in the March 22nd and 29th issues of AMERICAN ARTISAN.

The moral to be drawn from this is, "Always consult the expert when contemplating a fan installation, whether it be the consultant or manufacturer." I know this is a much used piece of advice, but venture to add that it is likewise a much abused one.

I now want to deal for a while with a very important part of fan design, the bearings and the methods of arranging fan drives, and although at first sight the question of driving may appear subsidiary to the bearing design, this is not neces-

sarily the case, as I will endeavor to prove.

If a combined set is being considered, that is, where the fan runner is mounted direct upon the shaft extension of an electric motor or other prime mover; the question of bearing design can be considered solely from the standpoint of the working conditions for which the particular set is intended, and all classes of bearings have their respective adherents.

The three most commonly used types of bearings are plain, self oiling, such as ring brush or wick lubricated and the like, and ball or roller pattern, and for the sake of simplification the plain, ring oiled and ball bearing will be considered as representative of its respective category.

The plain bearing or plunger



block is only used for comparatively light duties, and do not require a deal of explanation as to their actual design, but if it is agreed that they have their sphere of usefulness, then it is only fair that their application should claim its proper amount of attention. As a matter of fact, a plain bearing relies far more upon correct application and usage for its correct functioning than do bearings of more elaborate type, owing to the very fact of its plainness.

The composition of the bearing metal is a matter of importance, and although makers usually standardize their alloy for lining bearings, such alloys are not always the most suitable for all classes of work.

The present question of bearing metals is equally applicable to ring oiled bearings and the plain type.

For fans working under light and medium loads, say up to 3 in. of water, a good common bearing metal is reliable, but where hot air or fumes are being handled, or if the pressure exceeds 3-in. water gauge, a special alloy becomes necessary, and here again a lot of trouble and expense can be averted if the fan engineer has a free hand and is supplied with full details before the fan is put in hand.

White metal is frequently specified as "Babbitt" metal, but this term as employed today is vague and misleading. The specification introduced originally by Isaac Babbitt contained about 80 per cent tin, but the Babbitt metals upon the market at the present day contain anything from 0.5 per cent to 90 per cent tin, and the term is usually understood to apply to the lower grade metal. A suitable composition for normal running as before mentioned would be a lead basis white metal made up as follows:

Lead, 79.5 per cent; tin, 5 per cent; antimony, 15 per cent; copper, 0.3 per cent, and 0.2 per cent of other impurities, mostly arsenic.

Where more strenuous conditions are likely to be imposed, it is desirable to use an alloy containing about 20 per cent tin.

Owing to the solubility of the tin-antimony compound in the anti-

mony, the addition of tin diminishes the hardness and brittleness of the hard grains and also increases the compressive strength of the eutectic alloy.

This mixture comprises approximately 20 per cent tin, 15 per cent antimony, 63.2 per cent lead, 1.6 per cent copper and 0.2 per cent impurities.

Fans falling under this category would be those employed for high-water gauges, but handling air at normal temperatures, such as dust fans and the like.

In cases of an exacting nature, such as, for instance, the handling of hot gases and where water-jacketed bearings are not provided, it is necessary to employ a tin basis white metal containing from 70 to 80 per cent of this metal.

A composition of this higher durability would be made up of the following approximate composites: tin, 76 per cent; antimony, 12 per cent; lead, 9 per cent; copper, 2.5 per cent, and other metals, 0.5 per cent.

A composition to be avoided is that containing about 60 per cent tin and a high proportion of lead, as this alloy collapses at a low temperature. It contains a high proportion of eutectic alloy which has a melting point in the neighborhood of 170 degrees C. = 338 degrees F., and in cases of overheating it has been observed that globules of metal of eutectic composition liquefy from the bearing housing.

In neither of the above alloys should the arsenic factor be exceeded, as it is present as an impurity and always makes tinning to the bearing shell difficult, and to facilitate this operation the copper, which is also in the form of an impurity, should be of a high grade quality.

Besides the composition of the bearing metal, the subsequent channeling for oil conduction requires far more thought than is usually accorded to them.

When designing a bearing for any class of machinery the object aimed at is to provide a superficial area sufficient to accommodate a film of oil that will hold in suspension the

revolving parts of that machine and such an oil film can only be maintained if it is enclosed within an uninterrupted surface.

Unfortunately practical considerations made an uninterrupted surface in both journal and bearing impossible, as it is imperative that the latter be continually supplied with fresh oil to make up for the waste. The oil channels in the bearing are often made indiscriminately, with detrimental results to the bearing which cannot always be traced to their origin.

Oil is extremely liquifious and therefore will quickly and freely penetrate the smallest of apertures, so that only a slight depth of channel is necessary to ensure a ready flow.

(To Be Continued)

### *Novel Entertainment Feature at Utica Heater Company Convention.*

On Tuesday, April 22nd, the Utica Heater Company held a sales meeting of their furnace representatives for the Eastern territory, at which a novel form of entertainment was inaugurated. A radio was set up in the company's offices, and the representatives were given an opportunity to hear President Coolidge's address delivered to the Associated Press on that day.

It was agreed by all present that this was a more worthwhile and satisfactory means of entertainment than many others frequently employed at sales meetings. It furnished a relaxation in the routine of the meeting, yet inspired the listeners with enthusiasm and ideals which furthered the success of the convention.

Tom N. Witten, of Trenton, Missouri, says that an optimist is a man who can see an opportunity in every failure, and a pessimist is a son-of-a-gun who sees failure in every opportunity; or in other words, an optimist is one who looks into the darkness and sees a light where there is no light, but the pessimist is a man who comes along and snuffs the light out.

## *Hallett Tells St. Louis Chapter of Engineering Society New Developments of Recirculation of Air in Ventilation.*

*Relates Economies Effected in Design and Operation of Air Recirculation and Repurification Systems for Schools.*

ON PAGES 25 and 26 of our March 1st issue the first part of this article on new developments in recirculation of air in ventilation appears.

### **Develops Safe Means of Using Ozone.**

Another feature of the ozone problem was solved by the St. Louis experience. Ozone had everywhere been used in unknown but high concentrations. It seemed not to have occurred to most experimenters that ozone could be present without an odor. The theoretical critics of ozone always began by saying they did not like the smell of it. The odor and avoidance of an artificial air condition were enough to eliminate its use. However, the use of ozone similar to that of heat and all the rest of nature's resources must be used with judgment. The outcome was the development of a practical and safe means of controlling the output of ozone. The apparatus was designed in convenient units approximately as required for a school room. The apparatus was installed near the fan, either before or after, to secure perfect diffusion in the air. The concentration of ozone varied by the use of taps taken out of the transformer, or by a rheostat which used voltage between 3,000 volts and 5,000 volts, but in every case the control was locked or was inaccessible to the janitor or persons about the premises. The concentration, when once adjusted by an expert, did not have to be lowered. In fact, it was the custom to set it somewhat lower than normal at first installation and gradually to come to the correct amount. The correct concentration was just below that producing an ozone odor, approximately one part in two million of air.

The results of the use of ozone in the St. Louis schools have been described in many papers and have

been seen by thousands of visitors. Its use has been a most complete success and has accomplished more than could have been anticipated. All the new schools designed in the last four years have had the ozone apparatus installed as part of standard heating equipment. In all about forty-three large schools have been so equipped to date, and not a single instance of injury or suspected injury has occurred. In fact, the enthusiasm with which it has been received by teachers has been remarkable.

### **Recirculation Revolutionizes Necessary Equipment.**

Some facts should, perhaps, be related at this point to show the effect which ozone in the schools has had on the health of the pupils and teachers, but suffice it to say that the children under normal weight at the date of installation of ozone have rapidly risen to normal weight. Undoubtedly there was a slight exhilaration or freedom from fatigue. So heating and ventilation engineers must take cognizance of the effect ozone has had upon the odors and effluvia of air used for ventilation.

The next step in advance was the modification of the building and heating apparatus to coincide with the new condition coincident to the recirculation of the air. It meant the recasting of every item of the design. At the outset, the new condition called for boilers of one-third of the former capacity. A 100-horsepower standard tubular boiler was actually large for the standard 1,000,000 cubic feet school building. The former practice called for 300 horsepower. The corridors and all rooms not filled continuously with pupils had to be supplied with warm air in quantities just sufficient to heat the space. With the air flow in class rooms adjusted to the velocity most pleasing to the teacher,

no drafts were ever complained of, and no odors or other kind of stuffy air found present. In such a building the fan with a capacity of 45,000 cubic feet was run at full speed, so that the governor could maintain a constant speed on the fan. A larger fan was more difficult of nice control. This in effect reduced the fan size to one-third of former practice, but it did not reduce the necessary and proper air motion in the school rooms. The air motion had to be maintained just short of what a teacher would call a draft.

### **Flooding Nozzels Replace Those of Mist Type.**

Recirculation produced a new problem in the air washer. When recirculating 80 per cent or 90 per cent of the air with a high outside humidity the accumulated humidity of several returns of the air brought the humidity too high, if the standard mist nozzle type of washer were used. The air had to be repassed through the washer, as it removed dust which was carried in by the children. So the washer was designed on the carrier type, but with the mist nozzles supplanted by a row of flooding nozzles placed at or over the top of the scrubber blades. It was demonstrated that the principal dust elimination was accomplished by the wet surfaces of the closely spaced blades. The purpose of the mist nozzle was to humidify. It has been found in the new schools so constructed that the dust and bacteria count has been extremely low.

The best results have come from buildings planned for recirculation of the air. The building, including the heating plant, was highly efficient and convenient. The general layout was made convenient for the heating apparatus, so that the shortest runs were made of pipe and ducts. As an illustration, a main central entrance was used and the fan and air washer were installed under the stairway and the ducts, while heating coils occupied the ground floor corridor. A thin shaft, full room width, came down on one or both sides of the stairway, from attic to basement, for the return of the air



from the attic to the fan. The branch ducts for the several rooms ran up in 12-inch slots across the ends of the rooms rather than the larger rectangular flues, unless the old style wardrobe rooms were still used. The fact of supplying more than half of the building with warm air trunk ducts resulted in a great economy of space. It made provision for ample sizes in the room ducts. The plan provided an air pressure in the class rooms at all times. Corridor doors were kept closed with door checks. This pressure pushed the vented air on up to the attic duct and back to the fan. The fresh air intake connected with this return duct and only enough new air was taken in to replace the losses in the building, thus bringing about a minimum reduction. No tempering coils were required. The low pressure steam engine furnished the most economical power for the fan and air washer pump. The use of the exhaust steam for heating made this power cost less than that of any service company. The latest type of thermostatic control did away with rubber or other perishable material and proved extremely durable and sensitive; all dampers were operated by remote aid pressure control.

#### **System Recirculates 90 Per Cent of Air.**

Only in extremely moist weather has it been necessary to by-pass any of the returning air to keep down the humidity, provision being made for that if necessary. The cold air intake or the fresh air intake had to be left wide open at all times. It astonished visitors when told that the plant would recirculate 90 per cent of the air with the fresh air intake wide open at all times. The new air taken into the building was only what escaped through leakage and the toilet vents. The windows were weather stripped when new, and the frames were all plastic calked, and the leakage was very small in the new buildings. Formerly when all the air was wasted the leakage was not important, but with every cubic foot of air carrying heat units it became a matter of

cash value. Every avenue of escape of these B. t. u.'s was safely guarded. The open space in the flues or chases which carried the heat ducts to the several rooms was used to conduct the vented or returned air which was received in the attic by an insulated trunk duct, which carried this air to air shaft returning to the fan room. No metal duct was used for the air escaping from the room vents until it reached the attic. The air, after leaving the room, was treasured just the same as the coal pile, which it represented. The most direct means were used to accomplish every movement. The plant was built compactly and made convenient for the janitor or engineer.

#### **Right State of Mind of Teachers Must Be Developed.**

The details of construction here recited will not be applicable to every case or to any other case perhaps, but they are suggestive to the enterprising designer. It will be seen that the cost of such a plant is greatly reduced. In fact, it is cheaper to build, and build with the highest quality of apparatus, than to use a plain radiator system without ventilation. It will not cost more than one-half what the former heating plants cost. By an effort to cheapen they could be built for much less, but no skimping of sizes or quantity has ever been done. The factors of safety are, in fact, larger than ever. The quantity of vent coils is 50 per cent larger than theoretical needs to enable the janitor to heat the building quickly.

A right state of mind must be developed among teachers with reference to ventilation, not for the sake of the ventilation system or the engineer, but for their own sakes. It ought to be apparent to them that the washed and purified air which has passed quickly across a class room is still purer and more wholesome than that which the wind has swept up through a filthy alley or over the refuse of a slaughter house. It will greatly add to their comfort to know that the air has been scrubbed and bleached by ozone until it is pure as the fresh laundered

handkerchief. In contrast with this is the shower of dust and bad odors that fly in at the open window. The present highly perfected ventilation plants should be used as an educational feature in every school as a means of securing the full value from them. Nothing in a school has ever been done that ought to appeal to the imagination in a helpful way so much as the new ventilation. Anybody can take a deep breath and feel fine out in Yellowstone Park, and the air of our schools is identically the same. Some enthusiasm in "sensing" that fact will bring forth equally good results in other cases.

Recirculation and repurification have been fully established in both scientific and practical methods. The very large applications in St. Louis have been demonstrated beyond any possible denial as the best air condition ever produced by any method. The economy in plant costs and in fuel costs are great, but these should be forgotten when the health of the school is concerned. It has been gratifying beyond measure to have authentic confirmation of the fact of the rapid and general increase of weight to normal of the anæmic or pale children. The near future must reveal other advantages not here mentioned.

#### ***R. J. Schwab Prepares New and Attractive Wall Poster for Installer Use.***

R. J. Schwab & Sons Company, 279 Clinton Street, Milwaukee, Wisconsin, makers of the GiltEdge furnace, have just prepared a new wall poster illustrating their furnace.

A large GiltEdge furnace is depicted in the upper foreground of the poster, and the background for this is a deep blue sky, with snow falling. In the offing is seen a cozy little home covered with snow and from the chimney of which smoke is lazily curling.

In large type at the bottom are the words: "For heating efficiency, fuel economy, convenient operation and lasting service let us install a GiltEdge furnace."



## Meyer Furnace Salesmen Discuss Improved Manufacturing and Sales Methods at Recent Company Convention.

*L. S. Marsh, of Inland Steel, and A. P. Kratz, University of Illinois, Lecture on Warm Air Furnace—Sheldon School's President Instructs on Sales Fundamentals.*

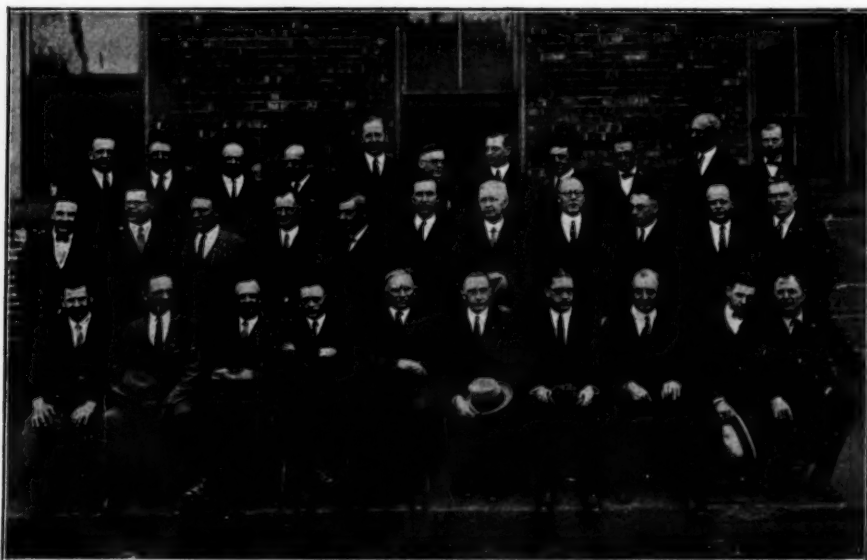
THE Meyer Furnace Company, Peoria, Illinois, makers of the Weir all-steel gas and soot consuming furnaces, staged a sales convention from April 22 to 25.

This convention is an annual affair and was instituted some time ago to give the salesmen an opportunity to become familiar with the new improvements in manufacturing and sales methods.

One of the important features of the meeting was an explanation and analysis of the steel used in the construction of the Weir furnace. This

The entire 4-day meeting was unanimously voted a great success and the salesmen returned to their respective territories with renewed vigor, confidence and inspiration.

The indisputable evidence of the sincerity of purpose of those present can be read on the countenances of the men shown in the illustration herewith. Referring to the illustration seated third from the left end is R. C. Walker, General Manager, while seated sixth from the left end is F. E. Mehrings, manager of the sales department.



Weir Furnace Sales Representatives, Photographed in Front of the Company's Peoria Offices During Sales Convention Held April 22 to 25.

lecture was made by L. S. Marsh, chief metallurgical engineer of the Inland Steel Company, who supplemented his remarks with many illustrations.

Instruction on the fundamentals of salesmanship and service were given by President Tolles, of the Sheldon schools.

A. P. Kratz, the well-known research professor at the University of Illinois, gave an illustrated lecture on warm air heating.

### *Three Houses Are to Be Built In and Near Chicago as an Experiment on Cost.*

The program of the *Chicago Daily News* to build three moderate-priced houses has held the interest of the building industry, bankers and real estate men as well as prospective home owners.

Ground was broken Monday, April 21st, for the first of these houses by Mayor Dever, representing the public, and as all the houses

will be built under the Landis Award, the Citizens' Committee to Enforce the Landis Award was represented by T. E. Donnelley, Chairman, and James A. Patten, Treasurer. The same contractor secured the contract for this house at 6847 Cregier Avenue and the North side house at Lunt and Pingree Avenues.

Ground for the River Forest house was broken Thursday, April 24th, with appropriate ceremonies, by the Village Board. There will no doubt be a close race between these contractors to see who can complete their work first.

To prove the legitimacy of their bids all contractors have guaranteed to build up to twenty similar houses a month at the same price. These homes will be exceptionally well built and different kinds of materials will be used in each house. This experiment will undoubtedly prove whether it is possible to build a desirable home economically and at a price which the average family can afford to pay, without putting a burden on them for years to come.

### *How to Avoid Interminable Delays in Securing Damages from Freight Claims.*

A good practice for you, in order to avoid much loss in time and freight damages, is to notify the freight claim agent of any damages or breakage of goods before their crates are opened. The claim agent will then present himself at the time of opening and will see the actual state of the package or box as it was received by you.

This will save you interminable delays in getting a settlement from the railroad company.

That small instrument, the tongue, often makes or mars a man's career.

Reducing stock through the elimination of the unnecessary makes possible more convenient arrangement and better display of merchandise lowers insurance and other costs, and permits greater concentration in selling.

# The Sheet Metal Cornice Has Field of Its Own, But Care Must Be Exercised Not to Use Too Much.

*Kothe Believes Cornices of the Future Will Be Tasty Pieces of Work That Will Stand Out In Contrast to Other Materials.*

Written Especially for AMERICAN ARTISAN by O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri.

OUR drawing shows the extent to which sheet metal may be applied in the ornate ends of gables on residences and other public buildings. In this case a window is placed in the center, so as to leave the effect somewhat as a dormer window, which in reality is of a larger design. Sheet metal cornice work of this kind has a great field; however, the problem is to avoid using too much of it on one building. For example, there are still many tradesmen who advocate metal store fronts and the like; but this is hardly a thing that will ever come into being again, only in isolated places, because sheet metal is not of a solid enough material to stand the abuses of first story construction. Then for the sides or front pitch of second stories, where ladders must be thrown up against them every now and then for over-

hauling, the mouldings soon become bruised and deformed, the paint peels off, and a rather unsightly appearance results. Of course, there are quite a number of tradesmen who will not concur in this opinion, but the sheet metal cornice work of the future, in the writer's opinion, will be tasty pieces of work that will stand out in contrast to other construction material.

The piece of work shown is entirely in order, since the rest of the building work is of stone, brick and slate, while this window and gable end is ornamented in sheet metal. That makes contrast and it also does not overdo a building of too much of the same thing. Now there are, of course, oil filling stations, comfort stations and the like, covered with sheet metal and some of an ornamental character. But these are more or less temporary buildings

and possibly their first object was low cost of construction. Sheet metal must in the future compete with the more substantial materials as stone, terra cotta and brick work. This requires that it must be done extremely well; it must be made rigid and absolutely water tight.

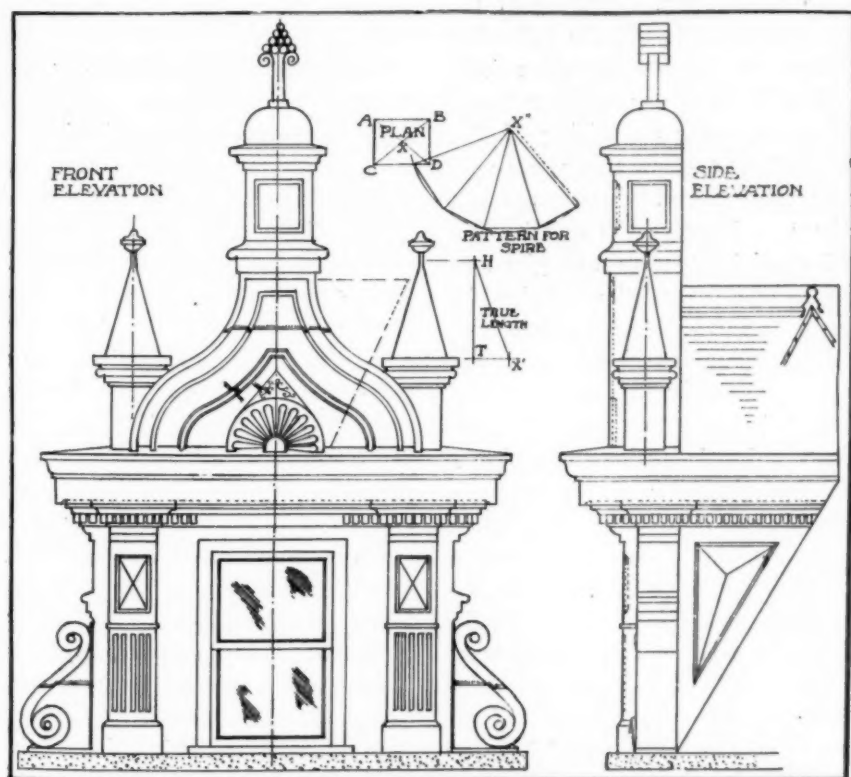
In those cities where accidents have occurred by the falling of terra cotta from tall buildings, these accidents are not the fault of the terra cotta itself, but rather a fault in the workmanship. These accidents occur mainly because the life in the mortar has lost its strength, thus allowing the terra cotta to loosen up and break away. This state of things will eventually be improved upon and sheet metal trade must again meet it on its equal terms.

Terra cotta, of course, lasts centuries in itself. It is a baked clay, and where no faulty material is used, it will do all that is expected of it. It has, of course, a disadvantage of high cost of manufacture and erection, and the disadvantage of being used on high buildings with extensive projections. This requires quite a bit of superstructure work and, therefore, increases building costs.

Terra cotta is a surface finish just like sheet metal. It does not form a part of the building as did the stone work in use centuries ago. Nowadays the building is supported by means of steel and concrete columns which support the other materials.

In view of these things, sheet metal has its place, and work that is well executed will last as long as the building ordinarily stands—in this country from 30 to 50 years.

In Europe, however, there are quite humble buildings that have been standing for three and four centuries, housing the same family



Pattern for Sheet Metal Cornice Work.

through all those years from father to son. In many cases the same old family furniture and household equipment is cherished. In this country every young married couple feels that their parents' furniture is out of date.

This shows the trend of popular thought, and it also shows that for ornamental purposes sheet metal is and can be made an important part of every building. However, the public must be educated to it. The matter of designing is the most important. Many of the patterns are of a simple nature even for the creation we show.

### *Iowa Sheet Metal Secretary, William Thomson, Is on Job.*

The new Secretary of the Iowa Sheet Metal Contractors' Association, who will put in his whole time in promotion work for the Association, has reported for duty. Mail will reach him at P. O. Box 573, Mason City.

Mr. Thomson was chosen from a large field of applicants and there is no doubt in the minds of the officers that he will be able to take care of the duties of secretary to the entire satisfaction of the members of the Association.

Mr. Thomson is a native of Scotland, having been born in that country on April 13, 1897. He came to the United States in 1911, and since that time has made his home at Waterloo, Iowa.

In 1913 he entered the employ of the Iowa Dairy Separator Company of Waterloo, and with the exception of six months spent in the U. S. service in 1918 has worked for that company continuously since that time until he accepted the position of secretary of the Association.

Mr. Thomson has not had any experience in the sheet metal business, but he is well qualified to handle the work of secretary, as he has had experience in practically all kinds of office work.

He will spend the first few weeks getting acquainted with the work of the Secretary's office, after which he will spend considerable time in

getting acquainted over the state and in organization work. He plans on visiting each district and will with the help of the District Chairman, call a meeting in each district at some future date.

The officers ask for the hearty cooperation of every member in helping Mr. Thomson put over the big tasks that are before him in this his first year as Secretary.

### *Northwestern Iowa Sheet Metal Contractors Will Hold District Meeting at Dubuque, May 22nd.*

At a recent meeting of the Dubuque, Iowa, Sheet Metal Contractors' Local, plans were laid for the first conference of District Number 1 to be held at Dubuque on May 22nd.

N. A. Lichty, District Chairman, advises that although details of the

program are not as yet available, there is every reason to expect that the conference, which will cover an afternoon and evening session, will be a great success.

Judging from comments received, the whole Dubuque Local Association is backing the conference to the limit, and from what we know of Dubuque members, this first meeting of District Number 1 will go over with a bang.

District Number 1 comprises the northeast section of Iowa, and takes in the following counties: Allamakee, Winneshiek, Howard, Chickasaw, Bremer, Fayette, Clayton, Blackhawk, Buchanan, Delaware and Dubuque. If you are located in any of these counties be sure to hold May 22nd open and make arrangements to attend the first conference of District Number 1 at Dubuque.

## *Roof of Building More Important Even Than Foundation, Says H. A. Daniel.*

*President of New York Sheet Metal Contractors Sees  
Time and Money for Organization Well Spent.*

H. A. DANIEL, Newburgh, New York, President of the Association, delivered the following address at their convention held April 30th in Syracuse, New York.

Following the organizing of this association at Utica two years ago, your officers and directors made efforts to increase the membership and special attention was given to the western part of the state by Mr. Yager, and to New York and Brooklyn by your President. It was found practically impossible at that time to interest the trade. A great difficulty has been that the majority of those engaged in our line of business have been and are doing business as mechanics rather than as business men. This has been responsible to a great extent for the lack of standing and success because we have lacked the vision to enable us to see the great importance of our part in the community and have, as a result, failed to realize that our modesty has cheapened us in the

eyes of the public and deprived us of the standing which we should have as business men.

### *The Roof Most Important of the Building.*

Some people say that the foundation is the most important part of the building, but when the truth is known it must be admitted that the roof is more important than the foundation. The best proof of this is the fact that the foundation may crack, settle, or get a little out of plumb and still support the building satisfactorily. But let there be a crack in the roof, even though too small to let a penny fall through edgewise, and the building itself and its contents will be ruined and the health of the occupants in danger. No building can endure permanently unless the roof is 100 per cent water-tight; therefore, it is safe to say that the roof is the most important part of the building.

Other important parts are the various branches of work which our



members do, such as heating, ventilating, metal ceilings, suction piping and other work of this kind. And we realize, too, that we are the last trade in the building line which fabricates its own material. The mason, the carpenter, the painter, the plumber, and the various other trades merely assemble materials made by manufacturers, while we take the raw materials and make up the various goods needed, such as skylights, cornices, etc.

Having established to our own satisfaction the importance of our trade, knowing the skill that is required in the proper handling of work in our line, is it not time that we realize that success will depend to a great extent on our own estimation of the value of our industry?

And what will enable us to better understand the situation and capitalize the importance of the industry than an organization which brings together the men engaged in the industry for good fellowship, education and united efforts to maintain better standards of business ethics and to secure profits commensurate with the skill and knowledge required in handling a business of such great importance as ours? Roosevelt truly said: "Every man owes some of his time to the up-building of the profession to which he belongs." It should not be necessary to either quote or repeat so true and obvious a saying as above, but we find some very successful men in our line who even yet are not convinced that it is a duty that they owe to the trade to help organize it and to assist in placing it in its proper standing in the community.

#### And Organization Pays.

It is undoubtedly true that the time and money given to organization work can be made the most remunerative of all the time and money given to the industry. The building up of a proper morale which would encourage men in the trade to realize its importance and value would more than pay for all of the various investments. But in addition to this, the good fellowship and spirit of friendship which would

be built up is of vast importance. United action in regard to the rules of business, wages, hours of labor, working rules where unions control the journeymen, and efforts of manufacturers and jobbers to sell direct, are all things which an organization can consider and improve.

Within the past two months the efforts of your officers have brought into our organization two local associations, Rochester and Newburgh, together with a number of individual members of places not organized. There is no doubt that a proper effort on the part of our members could, and should, double our membership this year.

The coöperation of all the members is needed to effect this result. It is not fair to ask or expect the officers, or just a few of the members, of an organization to carry the entire burden. It is your organization as well as theirs and it has a right to expect your coöperation and support. You will benefit and profit by the organization according to the way that you support it. Nothing is truer and nothing is surer than this. With your support we can make this one of the strongest organizations in the country.

#### *Improved Notcher and Bender Put on Market by Whitney Metal Tool, Rockford.*

The Whitney Metal Tool Company, manufacturers of the Whitney ball bearing punches, Rockford, Illinois, have just put on the market a new Angle Iron Notcher and Bender.

The bender, as shown in the illustration, is so constructed that it can be used with or without the notcher at the option of the customer. The anvil on the bending arm rotates in

conjunction with the bending operation and prevents distortion. The bender is adapted for bending 2x2x 1/4 inch angles or smaller.

The angle, the company states, is held firmly up to the shearing blade by means of a clamp screw. The punch, or shearing blade, enters the die by means of a pilot. The upper shear blade is made of tool steel and is inexpensive to replace in case of wear. The notcher is also supplied with patented ball bearing spindle.

Patents are pending both for the notcher and bender.

#### *Carnegie "Tech" to Open Summer School June 16th and 30th.*

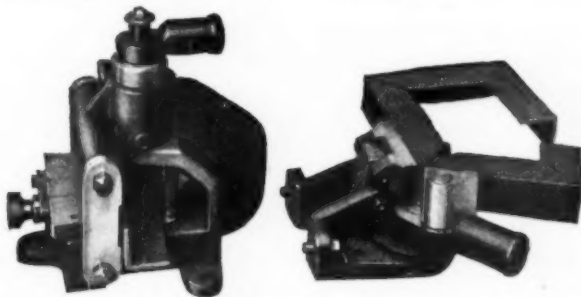
Of interest to the readers of AMERICAN ARTISAN contemplating the acquisition of further technical training in their several trades is the announcement of Carnegie Institute of Technology, Pittsburgh, Pennsylvania, that its summer school will begin June 16th and June 30th, continuing for six and eight weeks. Oxy-Acetylene welding will be one of the special courses offered.

Of interest, also, are the courses in mechanical drafting, patternmaking, machine shop practice, sheet metal work, radio communication: offered by the College of Industries.

The College of Engineering will give a wide variety of courses in chemistry, physics, mechanics, engineering drawing, geometry, surveying, and coal mining.

Under general studies, courses will include English, economics, mathematics, psychology, and commercial law.

Teachers' courses in home economics, music and art will be offered by other departments of the institute.



Whitney Improved Angle Iron Notcher and Bender.

## ***Blount L. Schlemmer Reveals Method Employed to Capture Roofing Business.***

***Schlemmer-Schlemmer, Warsaw, Indiana, Seek Out Business Which Newspaper Advertising Could Not Reach.***

WITH the opening of spring, plans for the capturing of additional business are rapidly crystallizing in the minds of wide-awake sheet metal contractors. There is a constant reaching out for new fields and untouched markets; to ferret out or create new sources of employing productive labor and thus increasing profits.

An excellent example of this reaching out for additional business and the methods employed in doing so is given hereinafter by showing how Schlemmer-Schlemmer, Roofing and Heating Contractors, Warsaw, Indiana, have set out to capture the business of Winona.

The following letter comes from Blount L. Schlemmer:

TO AMERICAN ARTISAN:

I have been a reader of AMERICAN ARTISAN for many years, and knowing as I do that it is only through the wholesome exchange of ideas that the sheet metal contractor can hope to advance, I am mailing you a circular letter, together with a stuffer, which we mailed to the property owners of Winona, Indiana, whom we could not reach through the newspapers.

This letter and stuffer will show how we are going about the business of creating more business for our firm, and I hope that other contractors will give the ball a push in like manner.

Yours truly,

BLOUNT L. SCHLEMMER.

The letter mailed to the Winona property owners is as follows:

"As spring draws near one begins to plan improvements for the home or summer cottage, and naturally one gives a thought to material and workmen.

"We make no idle boast when we say that a goodly number of our friends and customers are Winona property owners, so with this in mind and wishing to extend our

business activities in Winona, we wish to place at your disposal our services, backed by 17 years of practical experience along the line of roofing, sheet metal work and warm air heating.

"Metal roofing may be put on any style roof and when properly applied is rain-proof and storm-tight. It enhances the value of your property, may be painted to harmonize with the surroundings, lowers insurance rates and lessens fire hazards.

"We are dealers for the Rudy warm air furnace (made of charcoal iron, the most enduring iron to be had), and our ability to successfully plan a heating system is attested by the fact that during the

severe cold weather this winter, when the thermometer at times registered 20 degrees below zero, we received not one complaint from our customers.

"Remember, our services are at your command, and no job is too large for our ability to handle and no job too small for our consideration.

"We aim to please.

SCHLEMMER-SCHLEMMER."

The stuffer mentioned heretofore was a small folder illustrating "Dux-Bac" metal shingles, a product of the Eller Manufacturing Company, Canton, Ohio.

The shingles were shown in both red and green and were very attractively arranged so as to show their ease of application and the mechanical content of the shingles.

This is considered a master stroke of strategic bidding for the roofing business of Winona, and the method contains much meat for contractors in other towns.

## ***Ohio Sheet Metal Contractors Certainly Keep Showing Other State Bodies How to Do Things.***

***Secretary Mooney Believes in Letting Outsiders Know What Is Going On and Also in Passing Out Invitations to Come In.***

WHEN the Ohio Sheet Metal Contractors' Association voted at their 1923 convention to employ a paid secretary they did a good job, and when they took Arthur Lamneck's word and selected George F. Mooney for the office they did another good job, and things have been humming among the sheet metal contractors of the Buckeye state ever since.

Here is another example of the excellent work that is being done in the campaign for organization and members. It consists of a letter sent to all the sheet metal contractors in the fourteen largest cities of Ohio which are not already organized and with it a report of a recent joint meeting and dinner, held in Columbus, the members of Zanesville, Newark and Springfield Locals being guests of the Capital City Local.

The letter follows:

DEAR SIR:

Please take the time and patience to read the enclosed meagre report of a meeting of Sheet Metal Contractors.

Don't you agree with us that if there were such meetings frequently of the members of the trade in every town studying and standardizing thought on the subjects mentioned, that great profit and satisfaction would follow.

We are sending this letter to all the sheet metal contractors in your town that we have the names of. Won't you talk over the subject of a local association with them as you casually meet?

We are particularly anxious that you do this for the reason that a little later we are going to ask you to help us get a meeting where we can meet and talk with them.

You are invited to attend the State



Convention in Columbus, July 22 to 24, at the Southern Hotel, and we trust you will do so.

Very sincerely yours,

Sheet Metal Contractors' Association of Ohio.

GEORGE F. MOONEY,  
Secretary.

And here is the report, with a few terse and to-the-point remarks by Mr. Mooney:

#### Report of Joint Meeting.

Chicken dinner, motion compelling syncopation, aesthetic Terpsichorean solos, comic monologues, distracting jazz and a feast of reason, filled to the brim the too brief hours of the memorable meeting of the Columbus Association last Monday night in compliment to the members of the Springfield, Newark and Zanesville associations.

It was another great meeting of the sheet metal contractors of central Ohio, that left in its wake a deep desire and zeal to face and solve the problems that make for a more dignified, useful and profitable place for their important craft in the warp and woof of the variegated and complex weave of the present day industrial fabric.

Sociability tends to break down the barriers of reserve and create a favorable atmosphere for cordiality and good will which is an essential prelude to the development of confidence resulting in candor, toleration and the manifestation of the natural instinct of cooperation which is second, only, in strength to the instinct of selfishness, the one substantially constructive and the other incalculably mischievous.

An elaborate dinner and entertainment is not essential to a successful meeting, though sometimes it is useful to dispel lethargy and embellish the occasion for guests. However, on all business gatherings the feast of reason is the substantial, nourishing and enduring substance to enlarge knowledge by comparing experiences and that is exactly what stands out conspicuously as the aftermath of the great meetings at Zanesville and Columbus.

When the entertainment and levities were concluded the assembly

settled down to an old fashioned experience meeting and the discourse of J. D. Keeley, A. F. Flint, Charles Hauck, F. O. Jones, L. W. Hanslee, H. W. Poe, J. T. Shaw, George Snyder and many others was an inspiration and roused all present to a keen appreciation of the need and possibilities of collective action.

The range and comprehensiveness of the topics was marvelous for so brief a session, space here permitting only a brief reference to some of them:

Increase dues as a means to extend activities.

Agitation for original contracts for sheet metal work.

Feasibility of annual exhibition in connection with state convention.

A simple general cost account form to make certain the sum to spread as overburden.

Uniform trade customs.

Sheet metal problems.

Roofing problems.

Furnace problems.

Trade extension.

Mutual insurance.

Credit rating.

Collective advertising to school up the public to efficient material and service.

Tabulation and study of feasible suggestions in trade journals.

Educational process to study conflicts and problems of the various subdivisions of the trade and dissemination of the conclusions to the rank and file in the trade.

This program is certainly wide and deep enough to provide ample material to make interesting a hundred meetings a year of any association.

#### Guests Present.

Springfield—F. O. Jones, B. W. Follrath, G. C. Miller, O. B. Deaton, Charles Hauck, A. E. Flint, E. B. Hurst, H. E. Carney, Mr. Lawrence, J. A. Baker and August Michel.

Zanesville—L. W. Henslee, Clarence Snyder, Louis Webber, W. W. Hutchinson, Walter Hutchinson, Eddie Goff, J. T. Shaw, John Hoffman, Charles Saup, John Ludy and H. W. Roe.

Newark—J. E. Keeley, J. W. Weakley, Albert Jones, Justin Keeley and Harry Bailey.

Nelle—Harry Bailey.

Columbus—L. B. Ticknor and Allen Williams.

Cleveland—S. A. Schwartz.

## Columbus Sheet Metal Contractors Surely Know How to Keep Members Interested

*Blackboard Demonstrations and Cost Discussions to  
Be Regular Features of Meetings. The Triangle Push.*

THE following letter from George F. Mooney, Secretary of the Ohio Sheet Metal Contractors' Association, contains two suggestions which other locals may make use of to good advantage. One has reference to a "triangle contest" for new members.

The other shows in a very practical way one of the distinct benefits that accrue to active members from their membership and attendance at meetings.

Mr. Mooney's letter follows:  
To AMERICAN ARTISAN:

Kindly carry in your "Coming Conventions" department the announcement and date of the Ohio

State Convention which will be held in Columbus, Ohio, on July 22, 23, and 24, 1924, with headquarters at the Southern Hotel.

The Board of Directors of the State Association awarded the honor to Columbus at their recent meeting and left it to the Columbus Local to fix the exact date in July. This was done by the Columbus Association at its March meeting.

At this meeting a campaign was inaugurated to bring every sheet metal contractor in the city into the membership of the Local, and the following interesting "triangle" plan, suggested by O. J. Green was adopted.



William J. Kaiser and O. J. Green were appointed captains of two competing teams. Each selected fifteen assistants from the membership. These were divided into groups of three or triangles. The whole number of eligibles for membership were divided into halves and a half assigned to each team. The captains then apportioned the names to their groups or triangles and it is the duty of each member of a triangle to solicit each and every prospect assigned to his triangle, unless advised of his elimination by capture by one of his colleagues.

This insures that each prospect will be solicited three times by three different men before April 15th, at which time the campaign terminates and the losing team entertains the Association with chicken and noodles.

I was so impressed with the earnestness, interest and values of this meeting of the Columbus Association that I am impelled to tell you something of it. At the February meeting an old pioneer in association work, John Schilling, deplored the lack of pep in meetings and made a plea for the revival of a practice that had proved interesting some years ago. Therefore, Harvey H. Blackwood was directed to take the crayon and blackboard at the next meeting and start an argument.

Mr. Blackwood was equal to the task and he selected two examples of sheet metal competition which arose from his experience since the last meeting, each having a little history which he fully explained.

One example was the sheet metal work on an ordinary old ell shaped roof. The roof was drawn on the blackboard with all details explained together with a complete bill of materials and then each member was invited to figure the job and hand in his bid to the Secretary, without signature. A tabulation of the same revealed bids that ranged from \$93.50 to \$131.48. Then the assembly collectively analyzed the job and figured it, and it was conclusively shown that the low bidder was away below cost and that the high bidder would not obtain an unfair profit.

The second example was the cost of making chimney top stack, according to specifications, weighing 33 pounds. The figures ranged from 25 to 44 cents per pound.

The remarkable feature of the meeting was the exceedingly earnest and sustained discussion that arose from the consideration of many details involving executive management, brought out by the analysis of estimating, ranging from determining the line of demarkation between

productive and nonproductive labor and cost accounting to industrial relations.

The reluctance to adjourn after three hours of mental application to business and the by-chats after adjournment, clearly indicated that all, from the large employer to the executive of the one man shop had profited by the discussion.

Very truly yours,  
GEORGE F. MOONEY,  
Secretary.

## Chicago Roofing Contractor Finds Mailing Circular Effective in Producing Business.

*L. F. Daly, 1646 Ogden Avenue, Believes in Selecting Potential Prospective Customers by Direct Mail.*

**S**HEET metal contractors are generally compelled to adopt the same sales methods as used by hardware retailers, and the circular letter is found by both to produce excellent results.

The accompanying illustrations are those of a postal card folder used by L. F. Daly, Roofing Contractor, 1646 Ogden Avenue, Chi-

cago, for soliciting business.

The actual size of the folder is  $3\frac{1}{2} \times 6\frac{3}{4}$  inches folded. On the outside front there is the ruled space for the prospect's name and address.

The outside back cover of the folder is shown in the single column illustration marked Figure 1. In this Mr. Daly states the number of years that he has been in business and the customer draws his own conclusions, wherein he is wise. This gives him the prestige to which he is entitled with forty-five years of experience to his credit.

Figure 2 shows how the circular looks when opened and lying before the recipient.

Then in addition to this, Mr. Daly had inserted and fastened to the circular a postal card upon which was placed the name and address of his company. The back side of the postal card was left blank, to be used by the prospect in ordering an inspection of his roof.

The postal card was fastened to the circular so as not to become mislaid or lost.

This method has been found to be one of the most effective methods of soliciting business of this nature.

In the first place it is economical. The folder does not cost much at the outset; the return postal card and the postage on the outgoing circular amounted to 2 cents.

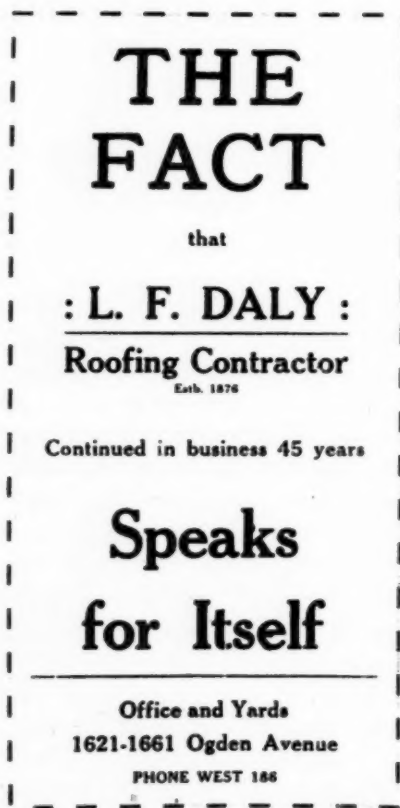


Figure 1.—Outside Back Cover of Daly Circular.

<p>We Use The Best Materials On the Market</p> <p>Applied by Men with Years of Experience</p> <p>No Sinting in Quantity of Material or Labor</p> <p>Our Guarantees Have Stood the Test of Time</p> <p>Our Prices Are Attractive</p> <p>We Are Fully Insured Under Workmen's Compensation Act</p>	<p>We Carry a Full Line of</p> <p><b>Building Papers Tarred Felts Asphalt Felts</b></p> <p><b>Ready Roofings Shingles</b></p> <p><b>Waterproofing and Dampproofing Compounds Pitch Tar</b></p> <p>Auto Truck Deliveries to All Parts of City</p> <p>Estimates Furnished Free</p>
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Figure 2.—Inside of Daly Folder as It Appears to the Prospect Upon Opening It Before Him.

The circular is sent only to a select list of home owners or prospective builders and the returns on these circulars are very satisfactory indeed.

Of course, it is not to be thought that no other advertising is done, because some newspaper advertising must always be taken.

This is an excellent circular and will give other sheet metal contractors some ideas on this form of advertising.

### ***New York State Sheet Metal Men Re-elect Daniel President at Syracuse April 30.***

Members of the New York State Sheet Metal Contractors' Association, at the second annual meeting in the Larned Building April 30th, went on record in favor of standardizing furnace installation and parts, to allow greater economy and provide greater protection for buyers of homes.

Seventy-five members were present, representing twenty New York cities. Discussion was confined to technical problems, such as open and

closed shop practice, wage rates and contracting methods.

The president's address will be found on page 24, this issue.

The following officers were elected:

President—H. A. Daniel, Newburgh.

First Vice-President—A. De Rosa, Utica.

Second Vice-President—W. J. Morrey, Rochester.

Secretary—John J. Yager, Buffalo.

Treasurer—W. E. Green, Utica.

G. R. Lynch, Binghamton; Otto Goebel, Syracuse; W. J. Moran, Lockport; Edwin Gillette, Ithaca; H. S. Burgess, Elmira, and C. A. Puckett, Brooklyn, were elected directors.

### ***New Jersey Zinc Company Will Advertise Products to Consumers.***

The New Jersey Zinc Company will start a consumer advertising campaign, running pages in the *Country Life*, *House and Garden* and *Home Beautiful*, featuring the use of the "Horsehead" Zinc Lead-

ers and Gutters. The advertisements will appear in August, September, October and November.

This advertising campaign will no doubt be very helpful to the sheet metal contractors who handle the Horsehead brand of zinc specialties.

### ***The American Rolling Mill Company Shows Big Increase in Sales.***

That consistent advertising and other aggressive selling methods bring increased business is evident from the recent statement of sales of the American Rolling Mill Company, makers of "Armco" iron.

In 1921, their sales were \$11,740,728; 1922 sales were \$20,294,205; 1923 sales were \$26,691,235.

Advertising and selling expenses for the same years were as follows: 1921—\$606,918; 1922—\$603,602; 1923—\$737,047.

Armco iron receives today more incidental advertising by manufacturers of furnaces, ranges and kindred products than any other brand of iron or steel, thus indicating that these manufacturers recognize the value of the name "Armco" in their selling campaigns.

### ***C. C. Mercer Is New Manager of Advertising for United Alloy Steel Corporation.***

C. C. Mercer is the new Advertising Manager of the United Alloy Steel Corporation, Canton, Ohio, succeeding R. M. Nicholson who resigned recently.

Mr. Mercer comes to his new duties from Philadelphia where he had wide experience in advertising work with N. W. Ayer & Son and the Hancock Payne advertising organizations. His work gave him an opportunity to study advertising plans and methods as used by some eighty different companies.

Previous to entering the advertising business Mr. Mercer had eight years of experience in the steel business, including actual work in open hearth furnaces, sheet mills, in annealing, pickling and galvanizing, in addition to sales work.

### *Harry Frye Gets the Monkey and the Mule to Discussing Matters.*

From the nature of Mr. Allen's remarks in the April 5th issue of AMERICAN ARTISAN, I am inclined to believe that he sent in the article for publication before digesting the geometrical proof of the problem in the issue of March 22nd. But if not, and he has the reasoning ability to analyze the proof submitted. I shall have to classify him with the mule:

#### **"The Monkey and Mule."**

A mule and a monkey did geometrically meet,  
To discuss a problem in inches and in feet.

The mule was stubborn, as mules should be,  
And with the monkey he just wouldn't agree.

The mule drew a line and said it was thus,  
And this, you see, started the fuss,  
The monkey said that the step wasn't right,  
And the mule kicked up and started to fight.

He called in Pythagoras as referee,  
And said to the monkey: "I'll make you see,  
That your system is wrong you four-handed beast,  
Conserving time it should reach to X at least."

The circuitous monkey, with no time to conserve,  
Drew circles and lines and one more curve,  
And said to the mule, "You old stubborn creature,  
I'll prove that it's right, feature by feature."

He geometrically proved that  $A^2$  equaled  $2XE$ ,  
And two circles plus one equaled circles three.  
But this old mule of the stubbornest kind,  
Balks at the proof as if he were blind.

And now that old Father Time has stood the test,  
And the monkey blew up and needs a rest,  
I'll finish this thing though just begun,  
With a mulish zest and a monkey's zeal for fun.

I have nothing further to say on the subject, except that if there is an error in the work, I hereby deny all responsibility for the theorems used in the proof and pass the buck to the spirits of old Euclid, Plato, Pythagoras and a few more of the old mathematicians who gave to the world the foundation of geometrical

deduction, and should suggest that Mr. Allen consult some good spirit medium, get in touch with these old sports' departed spirits and have it out with them.

I wish to deny flatly and entirely that I made any such statement that my method was any shorter or sweeter than other systems now in use, but might add that a system that would be short and sweet to me might be hard and complicated for the other fellow, and vice versa, and that I only passed this system along for what it was worth, and that a monkey and a mule have more ways than one to make folks laugh, and that most of the readers of AMERICAN ARTISAN understand the problem, are tired of this useless discussion, and that the good old ARTISAN needs this valuable space for something more constructive.

HARRY FRYE.

Tullahoma, Tennessee.

### *C. F. Beatty Will Visit England During Summer Months.*

C. F. Beatty, Advertising Manager of the New Jersey Zinc Company, will sail for England the early part of June and take a much needed rest. He will return the latter part of July. The death of Mr. Beatty's wife in January has hit him pretty hard and it is principally for this reason that he is going abroad. His two children will remain here with their grandmother.

It is the intention of Mr. Beatty to stay with a chum of his in Oxford and take things easy. He will see the famous boat races between Cambridge and Oxford.

While in England he will call on the Morris Ashby, Limited, English representatives of the New Jersey Zinc Company.

### *1924 Edition of Metal Statistics Now Available Covering Wider Scope Than Ever.*

The American Metal Market Company, 81 Fulton Street, New York, has recently issued the 1924 edition of Metal Statistics.

The new edition contains 528

pages and measures  $4\frac{1}{4} \times 6\frac{1}{4}$  inches. It is a complete, compact and comprehensive record of metal statistics. It is a standard statistical reference work of the ferrous and non-ferrous metal industries.

Many new additions have been made to the book this year to still further widen its scope and to increase its usefulness to buyers and sellers of iron, steel, metals and interrelated products. The book sells for one dollar.

### **Notes and Queries**

#### **Wringer Rolls for "Automatic" Wringer.**

From Meier Brothers, Henry, Illinois.

Where can I buy wringer rolls for the "Automatic" wringer?

Ans.—From the manufacturers, Lovell Manufacturing Company, 62 East Lake Street, Chicago, Illinois.

#### **"New Process" Oil Cook Stove.**

From R. J. Slothower and Son, 113 Hennepin Avenue, Dixon, Illinois.

Can you tell us who manufactures the "New Process" oil cook stove?

Ans.—New Process Stove Company, Division American Stove Company, 4415 Perkins Avenue, Cleveland, Ohio.

#### **Slate Surface Tapered Asphalt Shingles.**

From J. C. Marlow, Belle Center, Ohio.

Will you please advise me who makes slate surface tapered asphalt shingles?

Ans.—H. F. Watson Company, 5333 South Western Avenue, Chicago, Illinois.

#### **Address of Starbuck and Sons.**

From John McDonald, 418 West Sixth Street, Concordia, Kansas.

Can you furnish me the address of the Starbuck Company that sells plumbing tools?

Ans.—This concern is known as R. M. Starbuck and Sons, Hartford, Connecticut.

#### **"Champion" Ventilator.**

From Nord Furnace Company, 1029 Front Street, Moorhead, Minnesota.

Will you kindly advise us who makes the "Champion" ventilator?

Ans.—It was at one time made by the Champion Manufacturing and Sales Company of St. Louis, Missouri, now out of business. As far as we know this concern left no successors.



## Realistic Mill Scene Forms Attention-Arresting Feature in Pilcher Fishing Tackle Window Display.

*Ida Grove, Iowa, Hardware Creates Interest and Makes People Talk About the Store With Ever Useful Window Display.*

**F**ISHING enthusiasts will soon be out with their lines and tackle for repairs and replenishments. You can to a great degree hasten these preparations by calling the sportsman's attention to the approach of the fishing season. To create a large demand for fishing tackle, you must be an enthusiast

Pilcher Hardware Company, Ida Grove, Iowa, originated the idea illustrated in the accompanying photograph which indeed put the fishing tackle business in the first class in that store.

A large pond was placed in the center of the display window with a dam at one end.

around on the road. There are rocks piled in front of the dam, and small sacks of flour line the platform of the mill and the side. The water was running over the dam turning the mill wheel when the picture was taken.

The window was filled with different tackle supplies and sure made



J. Ray Pilcher, Manager of Pilcher Hardware Company, Ida Grove, Iowa, Knows How to Create Favorable Publicity for His Store, Thereby Keeping It in the Public Eye.

yourself, or at least one of your clerks should be. A fan of fishing as well as any other sport likes to talk shop, so to speak, and the clerk who is well informed on the latest happenings in that line can draw the trade to you.

But in order to get them started coming your way you have got to enlist the aid of the silent salesman—the display window.

J. Ray Pilcher, Manager of the

When the water is turned on the pond overflows over the dam which in turn runs the mill. The water then descends to the basement and is pumped around again with an electrically driven pump. Gravel surrounds the pond which has a green bottom. There are three little fishermen, as you see, on the bank, with lines and hooks, fishing.

A gravel road winds around the mill, and tractors are seen coming

an attractive display, causing a great deal of comment.

### ***Detroit Hardware Incorporated for \$50,000.***

The Detroit Hardware Manufacturing Company has been incorporated for \$50,000 to manufacture hardware by John Yoe, 109 Hickory Street, Wayne, Michigan, Albert David and Fred Schley.

### ***Definite Program of Paint Color Simplification Adopted at Washington Recently.***

At a meeting of paint manufacturers' and distributors' representatives held by the Division of Simplified Practice of the Department of Commerce, Washington, D. C., March 14, recommendations for a definite program of paint and varnish color simplification were adopted. The program will become effective September 1st.

These recommendations will affect a reduction of 10 per cent in the sizes and varieties now produced; also through the substitution of types of cans a 15 per cent reduction will be made.

Members of the National Retail Hardware Dealers' Association appearing for the consumer interest, urged a further reduction, offered a memorial commending manufacturers who had made reductions below war time standards and pledged co-operation in any further eliminations.

The specific program as adopted included the following:

Elimination of two and 3-pound cans.

Elimination of all sizes less than gallons in roof paint, barn paint and shingle paint.

Elimination of oblong or square cans in sizes smaller than one-half gallon for all products except carriage and automobile clear varnishes, varnish remover, bronzing liquid, Japan dryer, penetrating and spirit strains.

The schedule of shades and tints adopted was as follows:

Interior floor paints and floor enamels, 10; house paints, 32; flat wall paints, 20; enamels, 14; porch paints, 8; roof and barn paints, 4; shingle stains, 14; auto and carriage paints or enamels, 10; oil stains, 10; varnish stains, 8; spirit stains, 14. (All the foregoing exclusive of black and white.)

Oil colors 32 (including black, but counting the several shades of a single color as one color).

Architectural and marine var-

nishes, interior and exterior, 10; other varnishes, 28 (including all not specified above, such as Japan dryers, asphaltum, etc.).

Among the list of names of those who participated in the meeting are those of Herbert P. Sheets, Hamp Williams, A. C. Lamson and Rivers Peterson.

### ***E. G. Baltz Issues 1924 American Wholesale Hardware Directory.***

The 1924 American Wholesale Hardware Directory issued by Edward G. Baltz, 1701 Arch Street,

Philadelphia, is now available for distribution.

The book contains 146 pages of well edited and arranged lists. From pages 7 to 100 are found the wholesale hardware houses in the United States, followed by those of Canada; then come the heavy hardware jobbers and the New York exporters who handle hardware. These are followed by a list of department stores who handle hardware and housefurnishing goods. Lists of manufacturer's agents of the United States and a buyer's classified index of advertisers' goods make up the final pages.

## ***Pierrepont B. Noyes Addresses Hardware Men At New Orleans Convention.***

***Says Representative Government Is Functioning Badly And Active Coöperation Is Needed.***

THE following address was delivered at joint convention of American Hardware Manufacturers' Association and Southern Hardware Jobbers' Association at New Orleans, Louisiana, recently, by Pierrepont B. Noyes, former United States Rhineland Commissioner, and former President of American Hardware Manufacturers' Association:

Representative government is functioning badly in the United States. It is unquestionably at the lowest point within the memory of this generation. We may as well acknowledge this. It is too evident to every thinking American who is not hopelessly committed to some personal or party success. Everywhere I go I find a growing disgust with the ineffectiveness and paltriness and cowardice of current politics, as much as with its uncleanness.

Good citizens are mortified and alarmed, but they should not be surprised. Whenever the responsible leaders of a people adopt a policy of dodging or postponing all serious problems, the vacuum in statesmanship thus created is automatically filled with the noisy struggles of lit-

tle men for little ends and of corrupt men for corrupt ends.

That is exactly what has happened to our national politics during the past two years. Leaderless politicians, governed by fear for their political lives, have consistently shied at every great national problem until they have turned Washington into an arena where only the pettiest and most personal struggles are staged. Statesmanship has atrophied. In its place ambitious, little men are fighting other ambitious little men for personal or party gain. Public life has become infected with morbidity and hysteria.

On the other hand, our politicians are deceiving themselves if they think the people of the United States will permanently endure this hectic atmosphere which daily fills the front pages of the newspapers with a squalid hotch-potch of political scandals and the meaningless acrobatics of self-advertising legislators. We are all tired of the haggling and bargainings which make of great issues like taxation and the soldiers' bonus, footballs in a game for partisan advantage.

Traveling through different states during the last few months, I have



noted a growing demand, as yet unvoiced, for a brand new deal in politics. The unpolitical citizen has a feeling of helplessness. He does not yet know quite where to begin, but the rising tide of his anger at the piffing and corruption of our national politicians may soon upset all political calculations.

As far as I am concerned, the time has already come for heroic remedies. I do not believe that our political distemper can be cured without a major operation—a clean sweep and a complete new deal. Furthermore, I believe that a large majority of the citizens of the United States in their hearts agree with me. They are ready to demand new men and a new spirit in politics. They are ready to insist that at the coming election they be given a chance to vote for a candidate who will clean up and revitalize our national life, who will not simply drag Washington out of the mud, but will courageously open up the great issues which have been pigeon-holed or sand-bagged, and who will bring a constructive statesmanship to bear on their solution. Dangerous conditions at home and abroad are today developing under our very eyes, for lack of frank consideration. Settlements of vital importance for our future peace and prosperity are going against us by default.

In so far as oil investigations are sincere attempts to reinstate honesty and honor in public life, we are interested. But investigations and prosecutions are at best negative while the nation needs—how it needs!—a dose of the positive. We need not simply a housecleaning at Washington, but a wholesale hiring and firing. This country can afford to hire honest, able men who are big enough for their jobs.

#### **Expresses Need for Tariff.**

If we get a real leader, we shall want a platform which deals frankly with all the big problems confronting the nation; a platform which on its face means business. I will suggest rather than discuss the more important of these problems.

First, the tariff. There always

have been and probably always will be particular industries needing protection, but the present tariff law is devoted largely to protecting fat profits. Aside from these fat profits, its principal effect has been to raise the cost of living. It is a symptom of the economic confusion cultivated in the minds of the American people that the just complaints of our farmers are met with the fake soothing-syrup of a tariff raise on wheat, which can accomplish nothing except to raise the cost of flour, and which, as a matter of fact, has already during the month since it went into effect reduced the price of wheat for the farmer five cents a bushel. The price of wheat, as everyone knows, is determined by competition in the markets of Europe and not at all by competition with Canadian wheat in the United States. We need a sane and scientific tariff.

Then there is the matter of taxation. I need hardly suggest to business men that under existing circumstances the taxpayers of the United States are entitled to a substantial measure of relief from war taxation. Practically everyone is agreed on this and is agreed also on the simple principles which should govern this reduction. Yet our legislature goes on month after month, settling nothing. It has tangled itself up in political quarrels until no one knows whether we will get any relief at all, and everyone suspects that if a bill reducing taxes is finally passed, its provisions will be based on political trades rather than scientific principles. We need a straightforward, business-like treatment of taxation from now until the time when all unusual taxes can be dispensed with.

#### **Foreign Policy Needed.**

Then we are badly in need of a foreign policy. For five long years we have listened to "isolationist" nonsense. Our hopes have been buoyed up and our consciences soothed by periodical assurances that conditions in Europe were improving. Yet every time some untoward incident has projected facts through the smoke screen of cheap

optimism and "irreconcilable" oratory, we have seen in Europe starving millions, a vanishing mark, a falling franc, larger armies, new aggressions, and a feverish lining up of nations for the "next war." We went into the great war because we had made the painful discovery that our interests were so bound up with the rest of the world that, willy nilly we must play a part. In spite of our intense national determination during the war to insist that Europe substitute a new internationalism for the Hatfield-McCoy feudism which has for centuries been the political system of Europe, we ignominiously deserted our Allies and our own interests at the critical moment. Since then Europe has been steadily sliding towards bankruptcy and war.

#### **Permanent Peace Requires Active Coöperation.**

The history of the last four years proves that there is no possible chance for permanent peace without our active coöperation, and that without such peace and coöperation there is no chance for economic recovery and sound, prosperous business in the United States. In our own interest, therefore, we are bound in the end to use our immense power to help effect a political settlement in Europe. We should do it now. We should go back and finish the job we began in 1917 and make our record as a nation honorable. We have no foreign policy and we sorely need one.

Many other major problems will occur to you which are still unsolved and which certainly call for non-partisan discussion and courageous action—the immensely difficult liquor problem; the unfortunate economic situation of the farmers, and the so-called labor problem. Washington seems to have adopted the quaint idea that this last is settled; that between court injunctions and the strength of "big business" labor is "well in hand." I hear it said "the working man has already got all he can expect." No greater mistake can be made. The struggle for labor for a larger share of the comfort and happiness created by



industrial progress is no temporary or incidental struggle. It is as broad as civilization and as irresistibly progressive as the tides. Most of the progress of past years has come through bitter struggle and in spite of governments.

This movement toward the distribution more widely and more fairly of the fruits of prosperity has, I believe, only just begun. Fortunately, the more intelligent employers have come to recognize this and in general governments have adopted the policy of guiding and encouraging the movement rather than opposing it. What alarms me is evidence that the present administration at Washington is listening to insidious suggestions from the extreme right wing of capitalism—suggestions that the present lull in the conflict indicates its end and that certain excessive wage increases prove that the general advance has gone too far. Whenever capital adopts a bourbon attitude towards labor it is a misfortune. But a bourbon attitude on the part of government will lead to disaster. We need forward-looking men and a forward-looking platform here more than in any other department.

I have sketched these individual problems largely to indicate what I meant by "positive statesmanship." I neither wish to bind myself or you to any definite program. My one desire is to call attention to our desperate need of new men and new policies to replace the pusillanimous shilly-shallying and incidental corruption which has settled down like a plague on the government of this country. We want men who are doers, not putterers. And more than all we want a leader who can lead.

We should insist on a man altogether untainted by the small politics or corrupt politics of today. I do not say that he may not be a politician. Politics is a necessity and might be a noble profession in a representative government. In fact, a knowledge of politics is almost necessary in the present emergency. We want a practical man, but one whose vision reaches be-

yond the petty, beyond the immediate, beyond national boundaries. We need a constructive genius—one who knows how to "sell" his plans to the people and secure the full coöperation of his helpers. But above all, we must have a man of courage and the kind of honesty which will restore our confidence in government.

### Coming Conventions

Metal Branch of National Hardware Association, Bellevue-Stratford Hotel, Philadelphia, May 9 and 10, 1924. W. H. Donlevy, Chairman, Philadelphia, Pennsylvania.

Panhandle Hardware and Implement Association, Amarillo Hotel, Amarillo, Texas, May 12, 13 and 14, 1924. C. L. Thompson, Secretary and Treasurer, Canyon, Texas.

National Association of Stove Manufacturers, Hotel Astor, New York City, May 14 and 15, 1924. Allen W. Williams, Temporary Secretary, 52 West Gay Street, Columbus, Ohio.

Southeastern Retail Hardware and Implement Association, composed of Alabama, Florida, Georgia and Tennessee. Convention and Exhibition, Atlanta, Georgia, May 27, 28, 29, 1924. Walter Harlan, Secretary, 701 Grand Theater Building, Atlanta.

Western Warm Air Furnace and Supply Association, Savery Hotel, Des Moines, Iowa, June 11, 1924. John H. Hussie, Secretary, 2407 Cuming Street, Omaha, Nebraska.

National Retail Hardware Association Congress, San Francisco, California, June 16, 17, 18 and 19, 1924. Herbert P. Sheets, Secretary, Indianapolis, Indiana.

Hardware Association of the Carolinas Convention, Wrightsville Beach, North Carolina, June 17, 18, 19, 1924. T. W. Dixon, Secretary-Treasurer, 717-718 Commercial Bank Building, Charlotte, North Carolina.

Convention National Association of Sheet Metal Contractors of the United States, Raleigh Hotel, 12th and Pennsylvania Avenue, N. W., Washington, D. C., June 17, 18, 19 and 20. Edwin L. Seabrook, Secretary, 608 Chestnut Street, Philadelphia.

Michigan Sheet Metal and Roofing Contractors' Outing to Quebec, July 19 to 26, 1924. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

Ohio Sheet Metal Contractors' Association, Southern Hotel, Columbus, Ohio, July 22 to 24, 1924. George F. Mooney, Secretary, 213 First National Bank Building, Columbus, Ohio.

Pennsylvania & Atlantic Seaboard Hardware Association Convention and Exhibition, February 16 to 20, 1925, at Philadelphia Commercial Museum. Sharon E. Jones, Secretary.

### Retail Hardware Doings

#### Alabama.

The Madison Hardware Company at Huntsville has been damaged by fire.

#### California.

Callahan and Metcalf, plumbers at

Santo Rosa Avenue, Sebastapool, have added a hardware line to the plumbing business.

#### Colorado.

Fred Barenberg has sold his interest in the hardware business known as I. I. Tongish and Company, Loveland, to W. J. Solke.

#### Illinois.

A. Prabish, 2201 Lake Street, Melrose Park, has opened a hardware store with an entire new stock of goods and has engaged as manager C. R. Sallaz.

#### Iowa.

A deal has been completed whereby D. M. Larson disposed of his hardware business at Conrad to David S. Beck of Springfield.

The West Hardware store of Rock Rapids has been sold to A. J. Treman of Lake City.

C. E. Stukas and Sons, hardware merchants at 248 Fifth Avenue, Clinton, have purchased the Hinrichs' two-story brick building at 310 to 312 Second Street, which eventually will be occupied by the new owners' hardware establishment.

P. M. Meade of Brighton has sold his stock of hardware to W. B. Robison.

#### Kansas.

The Wineland Hardware Company of Belleville has been destroyed by fire of unknown origin.

#### Minnesota.

A deal has been completed whereby J. H. Bemis bought out the Stene Hardware Company at Ashby. Mr. Bemis and C. Stene have been partners for a good many years. In the future the store will be known as the J. H. Bemis Hardware Company.

Work has been started on the new building which E. O. Hanson will erect at Astoria for his hardware business.

Anton Ethen has purchased the hardware store of Ed Martell at New Duluth. Under the new management the store will be known as Ethen Hardware and Sheet Metal Company.

#### North Dakota.

The Gackle and Billigmeier store at Harvey has been purchased by the Harvey Hardware and Furniture Company, Incorporated.

K. A. Bakke has sold his interest in the Bakke and Trapp hardware and implement firm of Marion to Clarence Trapp. The new firm will be known as Trapp and Trapp, with John and Clarence Trapp as co-partners.

#### Nebraska.

The hardware store of M. P. Lund of Maskell has been damaged by fire.

#### Oklahoma.

The Southern Hardware Company of Tulsa will move into its own home, the former Mitchell-Young Produce Building, at First Street and Detroit Avenue, about June 1st.

#### South Dakota.

Work has been begun on the new store building of the McKee Hardware Company of Gregory.

#### Texas.

Charles Gray of the Gray Hardware Company of Cisco will open a branch hardware house at Moran.

#### Wisconsin.

F. M. Fuller of Hartland has sold his hardware stock to Wilford Zierke of North Lake. Mr. Fuller will retain the electrical part of the business and open a shop in the old building adjoining the store.

The Bingham Hardware store at 716 Tower Avenue, Superior, has been damaged by fire.

## Horace Link & Company Sold \$50,000 Worth of Stoves, Ranges and Furnaces in 1923.

*This Was Done in an Illinois City of Less Than 8,000 Inhabitants, and The Company Expects to Increase These Sales in 1924.*

PARIS, Illinois, is a typical county seat town of less than 8,000 people, located about twenty miles west of Terre Haute, Indiana, more than eight times as large, and with Mattoon, Illinois, with nearly 14,000, 37 miles west, and Danville, Illinois, with 34,000, equally near toward Chicago.

And yet, in Paris there is a store where over fifty thousand dollars' worth of ranges, heaters and warm air furnaces were sold in 1923—the year they said that the farmers had no money to spend for anything but the barest necessities!

There must have been something especially favorable to this store in conditions?

Not at all, for right in that same city we know of retail stores that did less business in 1923 than they did in 1922.

The only reason why Horace Link & Company sold and installed 49 furnaces in 1923, sold 28 Monarch ranges in one week and expect to increase sales in these lines twenty-five per cent in 1924, is that *they went out and located prospects and developed these prospects into customers* by a well planned and properly carried-out selling and advertising campaign.

Here is what Paxson Link, one of the owners, says:

"In our stove department we include oil stoves, gas stoves, ranges and heating systems.

"The lines we sell are Monarch Ranges, Paramount Gas Ranges, New Method Gas Ranges, Red Star and Florence Oil Stoves, Majestic and Round Oak Ranges and Round Oak heating systems.

"Some of these lines have been sold since we began business which is twenty years ago next October.

"At the beginning of 1921 we realized we would have to do something to keep our volume up to the high peak of 1920, and so added the line of heating systems.

"Our heating system volume has been mighty satisfactory since that time. We sold and installed 15 jobs in 1921, 38 in 1922, 49 in 1923 and with the number already sold this year we expect to easily reach 60 units for 1924.

"About 60 per cent of our stove and furnace sales were on a contract basis.

"We have periodical demonstration sales for oil stoves, ranges and heating systems averaging two each for a year. This enables us to develop a lot of business and make a

good many sales within a very short period.

"We have just completed the Monarch range sale in which 28 ranges were sold in one week's time. We offered the choice premium of enameled cooking ware or \$10.00 allowance for old ranges. Out of the 28 only three customers accepted the cooking ware premium and the balance all turned in their old ranges.

"These new Monarchs act as standing advertisement in 28 kitchens in our trade radius which has already brought us several subsequent sales.

"We secure our prospects by a unique yet simple method, details of which I am enclosing. These prospects are diligently followed up.

"The volume we did last year will be undoubtedly increased this year as we are pushing our business more diligently in our stove department. You, of course, realize that this volume enables us to purchase in carload lots which commands such satisfactory discounts that we have an extra profit left after the advertising methods we used to get business are paid for. We mean, that our quantity discount paid for premiums and other advertising plans and leaves to us an additional profit over our regular mark up."

The details mentioned consist of a letter which reads as follows, the addressee in each case being "the lady of the house":

"Believing that you are engaged in the greatest business in the world—that of home-making; and being guided by the sure knowledge that, if permitted, we can add something permanent to your happiness prompts us to ask your permission to compliment the importance of your life's undertaking by presenting you with a reproduction of the famous painting by Maud Tousey Fangel, 'The End of a Perfect Day.'

"It is a wonderful picture—of a baby; the most loved of all things. As you gaze upon it—the baby fallen asleep, its tousled head pillowed upon its arm, the little red lips forming for you an irresistible desire to impress a kiss upon them, the fallen

Name \_\_\_\_\_

Print Every Letter

Address \_\_\_\_\_

Give Town, Rural Route or street Number

☐ Furniture

☐ Range

☐ Oil Stove

☐ Heating Stove

☐ Kitchen Cabinet

☐ Rug

☐ Furnace

☐ Phonographs

☐ Piano

☐ Sewing Machine

☐ Electric Washer

☐ Electric Cleaner

☐ Draperies

Put X in Square opposite only items prospect is interested in

Prospect Card Which Horace Link & Company, Paris, Illinois, Uses to Good Advantage.



socks revealing dimpled knees—you feel care slipping silently from tired shoulders as you picture again your own proud parenthood and relive those happy and never-to-be-forgotten days that have passed away all too soon

"This beautiful symbol of home is yours *Free* for your coöperation of a few short minutes in filling out the six prospect slips in the enclosed booklet—informing us about others, who like yourself love their homes and wish to make them better.

"Your telephone and your memory will provide accurate information for these six cards. *Read the booklet carefully.* When you have it completed mail it to us—it is already addressed and stamped with your own name and address written plainly inside the back cover. As soon as it is received here we will send you free this beautiful reproduced painting for your home. This reproduction actually sells for \$1.00 and more in the best art shops all over the country.

"Fill out the booklet *now* and get it into the *First Mail*. The picture is yours *at once*.

"Yours in appreciation of your home and family,

"HORACE LINK & COMPANY."

The booklet referred to has a heavy cover, the last page of which bears the address of Horace Link & Company and a stamp is affixed there, so that there is absolutely no expense attached to the service requested, so far as the person addressed is concerned. Six cards are stapled into the cover, each one bearing the text shown in the illustration herewith. On the inside front cover the following "instructions" are printed:

"Fill out the six enclosed prospect slips and mail this complete booklet to us. Upon receiving it accurately filled out we will mail you *free* a beautiful reproduction of Maude Tousley Fangel's 'The End of a Perfect Day.'

"*Read carefully—*

"Only names of adults will be accepted as prospects. Only put cross in square opposite the articles

the prospect *actually wants or needs*. Indicate whether prospect is Mr., Mrs. or Miss."

Is it any wonder that Horace Link & Company sold over fifty thousand dollars' worth of stoves, ranges and furnaces in 1923 and that they have good reason to expect an increase over that in 1924?

But if there isn't something in that record that will make you "go after" business in some such manner, then there is something lacking in your make-up as a retail merchant.

### ***Jacobs Stove Company, Bridgeport, Will Enlarge Recently Acquired Avondale Plant.***

The Jacobs Stove Company, Bridgeport, Alabama, is planning to enlarge the plant at Avondale, Alabama, which it purchased recently from the Avondale Stove & Foundry Company.

Patterns and other equipment will be transferred to the Avondale plant from the plant at Bridgeport.

The officers of the Jacobs Stove Company are as follows:

President, O. L. Dortch; Vice-President, G. O. Stanley; Secretary, T. A. Stanley; Treasurer, M. I. Moody.

Perkins Ellis and Frank F. Ellis, respectively, are President and Secretary of the Avondale Stove & Foundry Company.

### ***Opinion on Handling More Than One Line of Stoves.***

In these days of specialization it is well to handle only one line of stoves. The dealer can then devote his entire time to that one line. It may be well to keep a couple of low-priced stoves on the floor, but these should not be mentioned until all efforts have been exhausted to sell the higher-priced goods.

One man said: "In my opinion, hardware and stoves do not go well together. By this I do not mean that the two cannot be sold under the one roof, but I think there should be one or more men devoting their time to stoves alone. We used to handle

hardware along with stoves for the first few years we were in business. During the first year we cut out hardware and specialized in stoves we found our business increased \$20,000. In a small store, where the man who sells a pound of nails is supposed to sell a stove if the opportunity arrives, I do not think that the same forceful salesmanship can be brought out. Then, too, when you are carrying a general line of hardware, it may be that a man comes in for a package of tacks, while another may be waiting to purchase a stove. You have to neglect either one or the other, and while the sale of a stove is much preferred to selling a package of tacks, no dealer wants to offend any man. Therefore, I say that, in order to produce best results, stoves should be made a department set apart by themselves.

"Another thing about displaying stoves right in with the hardware stock. I have been in many hardware stores which carry stoves, and in most of them I have found the tops and shelves of the ranges littered with kitchen utensils and other hardware articles. This not only detracts seriously from the effectiveness of the display, but also causes extra work in that when a customer comes to look over the range, all these articles have to be removed."

### ***Northwestern Stove Repair City Office Moved to 66 E. Lake Street.***

The downtown office and warehouse of the Northwestern Stove Repair Company is now located at 66 East Lake Street, Chicago, having been moved from 20 West Lake Street on May first.

The main office and factory are still at 662 West Roosevelt Road.

Be a booster for the store in which you work, not merely a selling machine.

The quality of your work will have a great deal to do with the quality of your life. If your work quality is down, your character will be down, your standards down, your ideals down.



## Advertisements Offering Refrigerators and Window Screens Will be Read With Intense Interest at This Time.

*Make a Leader of Spring Items to Draw Trade Into  
the Store so That the Salesmen Will Have a Chance.*

THERE are several excellent and attractive features embodied in the accompanying reprint from the *Saginaw Michigan Courier*.

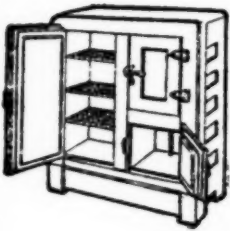
The head liner is such as to attract attention and create interest

anywhere in the city and suburban districts."

\* \* \*

Here is an excellent example of a headliner that never fails to attract attention. "Now." Now what?

### Buy Your Refrigerator Now and Save Money The "Wisconsin Peerless"



is universally known as the best refrigerator and for that reason is the cheapest. In the "Wisconsin Peerless" seven walls preserve the ice. There is the first outside case; second, prepared building paper; third, mineral wool; fourth, prepared building paper; fifth, air space; sixth, inside case, and seventh the metal lining. It is the only refrigerator made with this perfect construction. It also has a perfect system for carrying off the meltings of ice—

a special syphon or trap found only in the Wisconsin Peerless. These are only two of the many exclusive features of the Wisconsin. Come in this week when instructions on perfect refrigeration will be given.

**POPP**  
**HARDWARE CO.**

Federal 307. We deliver anywhere in the city and suburban districts.

718-22 Genesee Ave.

Corner Park.

instantly. The next important feature to be considered in making up an ad of this sort would be the name plate, or where the goods offered can be procured. In the signature of the ad there could be no possible chance for doubt or misunderstanding. However, the copy writer has gone still farther, he has also added the words, "we deliver

Now is the time to think of screens! Can't you just hear friend wife telling friend husband to drop into the store and see about the screens.

This is a very good ad and advertisers can profit handsomely from a thorough study of its typography and wording. It appeared in the *Lewistown, Pennsylvania, Sentinel*.

# NOW

Is the Time to Think of  
Screens

Stained Doors, all sizes  
\$2.00 and \$2.25

Natural Finish Doors  
\$2.75 and \$3.00

With Hinges and Knobs

Window Screens  
Fly Proof, Sturdy and  
Strong

15x33	50c
18x33	60c
24x33	70c
24x41	80c
28x41	95c

### SPRAYERS

Protect your plants from the invasion of bugs and insects.

ARSENATE OF LEAD  
HALL'S NICOTINE  
SULPHATE SOLUTION  
PARIS GREEN  
PYROX

Hand Sprayers..... 75c  
Three Gal. Capacity  
Compressed Air Sprayers  
\$6.50



### SPECIAL

While They Last  
26 INCH 7 AND 8 POINT HAND  
SAWS, \$1.25

**Mifflin County  
Hardware Co.**  
On the Square

## Building Continues Mainstay for General Business— Merchandise Loadings Ahead of Previous Records.

*Inventories Not Burdensome—Bank Reserves Good—  
Exchange Fluctuations Affect Non-Ferrous Metals.*

**I**N THE stock market declining prices once again held sway, this despite the fact that there were certain favorable items for review, notably the earnings statement of the United States Steel Corporation for the first quarter of the year, which showed the largest net for any peace time quarter in the history of the corporation.

Furthermore, there was particular satisfaction to be derived from the statement, in that the March figures showed up so well in comparison to the preceding months. So far as the market was concerned it gave more particular attention to the trade reviews of the steel situation, which are not so reassuring as had been hoped, according to the *Chicago Journal of Commerce*.

The *Iron Age* reported that the shrinkage in iron and steel output, which had continued through the early weeks of April, was becoming more rapid, and that the decline in ingot production from the high point in March had been about 20 per cent.

The steel industry is, therefore, running into a declining period of production and, while the remarks of Judge Gary have been optimistic, there can be no doubt that an unfavorable change is coming to pass.

The weekly steel trade summaries report continuous curtailment of production. It is figured that present output is approximately 20 per cent less than the maximum of March. This estimate will be considered in the light of the recent monthly production figures, which showed increase of nearly 30 per cent between December and March.

But on the other hand, the *Iron Trade Review* reports that actual deliveries during April averaged only 4 to 5 per cent less than those of March. Consumption has not

swung upward and downward with the wide range of production.

At present it is admittedly decreasing, but the *Iron Age* makes the suggestion that, if buyers continue to reduce their purchases, "production may soon fall below requirements and replenishment buying become the decisive factor."

### Copper.

Copper business in the markets outside of New York was again quiet and the tone somewhat easier, although prices were without essential change.

Electrolytic was quotable at 13.25 cents f. o. b. refinery for prompt, May and June shipment, with five points higher asked for July and ten points higher for third quarter shipment.

Very little interest was shown by either operators or dealers in late positions.

Lake copper was easier at 13.50 cents to 13.62½ cents, delivered, and casting copper is dull at 13 cents f. o. b. refinery.

### Tin.

A substantial decrease in the world's visible supply of tin is expected this month, which some estimate as high as 3,000 tons. There is a sharp division of opinion as to the course of prices in the near future. The last rally lived but a day and Tuesday's prices at New York fell half a cent, while the list in London was off £3.

In the domestic market Tuesday the earlier deliveries and positions of Straits and Straits shipments closed at 48¾ cents a pound, while futures were an eighth to a quarter of a cent under this.

Some of the far distant positions of Straits shipments were quoted at as low as 47¾ cents. There was no premium on spot Tuesday.

### Lead.

Lead is unchanged at about 7¾ cents New York and 7.55 cents St. Louis, with the leading interests quoting 8 cents New York.

There is a steadier tone to the market, which seems justified by the immediate statistical position, for while buying has been and still is small in volume, there is little accumulation in producers' hands. In fact, one prominent interest asserts they have not been able to deliver all their April commitments by some 250 tons, and are not offering May shipment below the price of prompt.

### Zinc.

Zinc is weak and wobbly at 6 cents St. Louis and even lower has been reported.

There was some consuming buying yesterday at 6.00 cents East St. Louis for prompt shipment, but not enough to sustain the market at that level, and there were offerings April 30 at 5.95 cents East St. Louis for prime western.

One untoward feature of the situation is that quite a number of requests for postponement of delivery are being received.

### Solder.

Chicago warehouse prices on solder are as follows: Warranted, 50-50, \$31.00; Commercial, 45-55, \$30.25, and Plumbers', \$29.00, all per 100 pounds.

### Wire and Nails.

Slackness is more pronounced in wire products, although some producers find a fairly active market as regards fixed carload buying.

Scattered jobbers furnish a fairly large aggregate tonnage of this character. Smooth wire demand has fallen off in recent weeks and much of the present consumption of nails in building construction has been anticipated, although replacements

soon will be necessary since stocks are moderate.

Wire and nail mill operations are averaging between 60 and 70 per cent of capacity.

Prices hold fairly well, the only departure from 275 cents and 3.00 cents, base Pittsburgh, on plain wire and nails being in competition by southern Ohio makers, which are met in some cases by equalization of freight rates.

Cement-coated nails still are quoted at 2.50 cents, base Pittsburgh, with only fair demand.

### **Bolts and Nuts.**

The downward tendency in prices and demand at Chicago continue in the bolt and nut market. Weakness has developed in stove bolts in the past few days and less than 75, 10 and 5 off has been done. Specifications from automobile and farm implement makers are lighter. Lower prices have not stimulated business.

### **Tin Plate.**

Shipments of tin plate at Pittsburgh have been held up at their source by some of the canmakers, due to the fact that calls upon them for can deliveries are at least a month late, and congestion prevents their taking in additional plate.

In some states where much food is packed in cans and where the planting should now be done, the ground has not even been prepared.

The year 1924 is expected to be a huge tin plate producing and consuming year, but real consumption will be a month or more late in getting started. In the meantime there is not much necessity for the American Sheet & Tin Plate Company to announce its third quarter or last half price, and while it is expected to be the same as at present, \$5.50 per base box of 100 pounds, Pittsburgh, formal action will be deferred a few days.

The mill operations are averaging a trifle under 90 per cent of capacity.

### **Sheets.**

In the face of a shrinking sheet demand, several producers in the independent group have shaded prices

over a period of weeks and these continue to offer concessions.

Buyers generally are following a conservative course in placing orders for their requirements and are not anticipating more than a week or two ahead. While in one known case 3.50 cents, Pittsburgh, was quoted on black sheets, this price so far as can be ascertained is not general.

The regular market on black sheets is quoted at 3.60 cents to 3.85 cents, although one or two large independent interests have so far refused to go below 3.75 cents.

The same general condition prevails in connection with galvanized sheets. While 4.90 cents is the usually quoted price by independent producers, some levels have appeared lower than that down to 4.75 cents.

In blue annealed, one Mahoning

valley sheet maker is obtaining a fairly large number of small sheet orders at 2.90 cents, but 2.85 cents, 2.80 cents and even 2.75 cents are the levels that have appeared in other directions. Sheet mill operations average around 70 per cent of capacity in this vicinity.

### **Old Metals.**

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$17.50 to \$18.00; old iron axles, \$25.00 to \$25.50; steel springs, \$18.50 to \$19.00; No. 1 wrought iron, \$12.00 to \$12.50; No. 1 cast, \$16.75 to \$17.25, all per net tons. Prices for non-ferrous metals are quoted as follows, per pounds: Light copper, 8½ cents; light brass, 5 cents; lead, 5½ cents; zinc, 3½ cents, and cast aluminum, 15 cents.

## ***Pig Iron Dormant Again After Slight Increase in Activity Shown Last Week.***

***Sales at Birmingham Are Light—Chicago Market Devoid of Inquiries—No. 2 Foundry, Pittsburgh at \$21 to \$21.50.***

**A**FTER a slight increase in activity noted a week ago, the pig iron market is dormant again. Pig iron sales in the Birmingham district are light.

The smaller furnace interests are receiving enough orders to make a fairly good aggregate.

The larger and more active producers also are taking a little business and delivering steadily on contracts.

Quotations range between \$22 and \$23 for No. 2 foundry iron. Makers say these prices are near their costs.

Much confidence is expressed as to the market, and furnace interests believe a buying movement will begin during May.

Production for April will be equal to that of March.

Cast iron pipe makers are said to be estimating needs of iron for some time ahead.

Although pig iron prices are weak at Chicago and the market is devoid

of outstanding inquiries, more interest is evidenced by melters.

The point apparently has been reached where reduced prices are interesting buyers. This has not yet developed much business, but it is encouraging.

Producers and brokers expect May shipments will exceed April's and that June's will be still higher.

The price of \$24, furnace, for northern malleable and foundry iron has disappeared. The most general quotation is \$23.50, with sales of standard iron at \$23 and sales of slightly sub-standard iron at \$22.50.

An inquiry also is out for several hundred tons of low phosphorus iron.

One Federal furnace is going out within thirty days. A Sheffield, Alabama, maker continues willing to meet the northern price with iron shipped by barge, but sales are light.

Several sales of 150 tons of charcoal iron and silveries are noted.



# Chicago Warehouse Prices on Hardware and Metals.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

## METALS

### PIG IRON.

Chicago Foundry...	24 00
Southern Fdy. No. 2	28 01 to 29 01
Lake Sup. Charcoal	29 04
Malleable	24 00

### FIRST QUALITY BRIGHT TIN PLATES.

IC	14x20 112 sheets	\$12 45
IX	14x20	14 05
IXX	14x20 56 sheets	17 57
IXXX	14x20	18 12
IXXXX	14x20	18 65
IC	20x28 112 sheets	27 50
IX	20x28 56 sheets	29 85
IXX	20x28	18 15
IXXX	20x28	17 20
IXXXX	20x28	18 25

### TERNE PLATES

	Per Box
IC 20x28, 40-lb. 112 sheets	\$25 60
IX 20x28, 40-lb.	28 50
IC 20x28, 30-lb.	21 80
IX 20x28, 30-lb.	24 70
IC 20x28, 25-lb.	20 30
IX 20x28, 25-lb.	23 70
IC 20x28, 20-lb.	18 30
IX 20x28, 20-lb.	21 15
IC 20x28, 15-lb.	17 05
IX 20x28, 15-lb.	16 75
IC 20x28, 8-lb.	14 05

### COKE PLATES.

Cokes, 80 lbs., base, 20x28.	\$13 85
Cokes, 90 lbs., base, 20x28.	14 10
Cokes, 100 lbs., base, 20x28.	14 45
Cokes, 107 lbs., base, IC	
20x28	14 85
Cokes, 135 lbs., base, IX	
20x28	17 40
Cokes, 155 lbs., base, 56 sheets	9 75
Cokes, 175 lbs., base, 56 sheets	10 65
Cokes, 195 lbs., base, 56 sheets	11 70
Base	per 100 lbs. \$3 50

### BLUE ANNEALED SHEETS.

Base	per 100 lbs. \$3 50
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### ONE PASS COLD ROLLED BLACK.

No. 18-20	per 100 lbs. \$4 50
No. 22-24	per 100 lbs. 4 55
No. 26	per 100 lbs. 4 60
No. 27	per 100 lbs. 4 65
No. 28	per 100 lbs. 4 70
No. 29	per 100 lbs. 4 75

### GALVANIZED.

No. 16	per 100 lbs. \$4 85
No. 18-20	per 100 lbs. 5 00
No. 22-24	per 100 lbs. 5 15
No. 26	per 100 lbs. 5 30
No. 27	per 100 lbs. 5 45
No. 28	per 100 lbs. 5 60
No. 30	per 100 lbs. 6 10

### BAR SOLDER.

Warranted.	
50-50	per 100 lbs. 31 00
Commercial.	
45-55	per 100 lbs. 30 25
Plumbers	per 100 lbs. 29 00

### ZINC.

In Slabs	6 25
----------	------

### SHEET ZINC.

Cask lots, stock, 100 lbs.	11 75
Less than cask lots, 100 lbs.	12 00

### BRASS.

Sheets, Chicago base	19% c
Mill Base	17% c
Tubing, brazed, base	25% c
Wire, base	17% c

### COPPER.

Sheets, Chicago base	21% c
Mill base	20% c
Tubing, seamless, base	23% c
Wire, No. 9 & 10 B. & S. Ga.	17% c
Wire, No. 11, B. & S. Ga.	17% c

### LEAD.

American Pig	8 25
Bar	9 25
Sheet.	
Full Colls	per 100 lbs. 13 00
Cut Colls	per 100 lbs. 13 25

### TIN.

Pig Tin	per 100 lbs. 51 00
Bar Tin	per 100 lbs. 52 00

## HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

### ADZES.

Coopers'.	
Barton's	Net
White's	Net

### AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder	18%
Loaded with Smokeless Powder	18%

Winchester.	
Smokeless Repeater	
Grade	20 & 4%
Smokeless Leader	
Grade	20 & 4%
Black Powder	20 & 4%

U. M. C.	
Nitro Club	20 & 4%
Arrow	20 & 4%
New Club	20 & 4%

Gun Wads—per 1000.	
Winchester	7-8 gauge 10 & 7 1/4%
"	9-10 gauge 10 & 7 1/4%
"	11-28 gauge 10 & 7 1/4%

### ASBESTOS.

Paper up to 1/16	6c per lb.
Rollboard	6 1/4 c per lb.
Millboard 3/32 to 1/2	6c per lb.
Corrugated Paper (250 sq. ft. to roll)	\$6.00 per roll

### AUGERS.

Boring Machine	40 & 10%
Carpenter's Nut	50%

### Hollow.

Stearns, No. 4, doz.	\$11 50
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### Post Hole.

Iwan's Post Hole and Well	35%
Vaughan's, 4 to 9 in.	\$15 60

### AXES.

First Quality, Single Bitted (unhandled), 3 to 4 lb., per doz.	\$14 00
Good Quality, Single Bitted, same weight, per doz.	13 00

### BAR, CROW.

Steel, 4 ft., 10 lb.	\$ 80
Steel, 5 ft., 18 lb.	1 40
Pinch Bars,	
5 1/2 ft., 24 lb.	1 60

### BAR, WRECKING.

V. & B. No. 12	\$0 34
V. & B. No. 24	0 43
V. & B. No. 324	0 57
V. & B. No. 30	0 48
V. & B. No. 330	0 63

### BITS.

All Vaughan and Bushnell.	
Screw Driver, No. 30, each	\$ 27
Screw Driver, No. 1, each	16
Reamer, No. 80, each	41
Reamer, No. 100, each	41
Countersink, No. 13, each	20
Countersink, Nos. 14-15, each	27

### BLADES, SAW.

Wood.	
Atkins 30-in.	
Nos.	6 40 26
	\$8 90 \$9 45 \$5 40

### BLOCKS.

Wooden	45%
Patent	45%

### BLOW TORCHES (See Firepots).

### BOARDS.

Stove.	Per Doz.
Crystal, 33"	\$23 90

### Wash.

No. 760, Banner Globe (single)	per doz. \$5 25
No. 652, Banner Globe (single)	per doz. 6 75
No. 801, Brass King,	
No. 860, Single—Plain	per doz. 8 25
Pump	6 25

## BOLTS.

Carriage.	
Small, roll thread	50-10%
Small and Large cut thread	50%

### Machine.

Small, roll thread	60%
Small, cut thread	50 & 10%
Stove	70-10%

### BRACES, RATCHET.

V. & B. No. 444, 8 in.	\$4 54
V. & B. No. 222, 8 in.	3 89
V. & B. No. 111, 8 in.	3 55
V. & B. No. 11, 8 in.	3 02

### BRUSHES.

Hot Air Pipe Cleaning.	
Bristle, with handle, each	\$0 85

### Flue Cleaning.

Steel Only, each	\$1 25
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### BURRS.

Copper Burrs only	40%
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### BUTTS.

Steel, antique copper or dull brass finish—case lots—	
3 1/2 x 3 1/2—per dozen pairs	\$3 12
4 x 1	4 40

Heavy Bevel steel inside sets, case lots—	
per dozen sets	7 80

Steel bit keyed front door sets, each	1 90
---------------------------------------	------

Wrought brass bit keyed front door sets, each	3 25
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Cylinder front door sets, each	7 50
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### CEMENT, FURNACE.

American Seal, 5 lb. cans, net	\$ 45
" 50-lb. cans, "	90
" 25 lb. cans, "	2 00
Asbestos, 5 lb. cans, net	45
Pecora	per 100 lbs. 7 51

### CHAINS.

1/2 in. proof coil chain, per 100 lbs.	\$8 50
American coil chain	40 & 10%

### CHIMNEY TOPS.

Iwan's Complete Rev. & Vent.	30%
Iwan's Iron Mountain only.	35%
Standard	30 to 40%

### CHISELS.

Cold.	
V. & B. No. 25, 1/4 in. ea.	\$0 26
V. & B. No. 25, 1/2 in. ea.	41

### Diamond Point.

V. & B. No. 55, 1/4 in.	0 31
V. & B. No. 55, 1/2 in.	0 48

### Firmer Bevelled.

Round Nose.	
V. & B. No. 65, 1/4 in.	0 20
V. & B. No. 65, 1/2 in.	0 40

### Socket Firmer.

Cape.	
V. & B. No. 50, 1/4 in.	0 31
V. & B. No. 50, 1/2 in.	0 57

### CHUCKS, DRILL.

Goodell's, for Goodell's Screw Drivers	List less 35-40%
Yankee, for Yankee Screw Drivers	\$6 00

### CLAMPS.

Adjustable.	
No. 100, Door (Stearns)	
doz.	\$22 00

### Carpenter's.

Steel Bar	List price plus 20%
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### Hose.

Sherman's brass, 3/4-inch	per doz. \$0 48
Double, brass, 3/4-inch, per doz.	1 20

### CLINKER TONGS.

Front Rank, each	\$1 75
Per doz.	18 00

## CLIPS.

Damper.	
Acme, with tail pieces, per doz.	\$1 25
Non Rivet tail pieces, per doz.	25

## COPPERS—Soldering.

### Pointed Roofing.

3 lb. and heavier	per lb. 40c
2 1/2 lb.	45c
2 lb.	48c
1 1/2 lb.	55c
1 lb.	60c

## CORD.

No. 7 Std. per doz. banks	\$10 75
No. 8 " " " "	12 30

## CORNICE BRAKES.

Chicago Steel Bending.	
Nos. 1 to 6B	10%

## COUPLING HOSE.

Brass	per doz. \$2 20
-------	-----------------

## CUT-OFFS.

Kuehn's Korrekt Kutoffs:	
Galv. plain, round or cor. rd.	
Standard gauge	40%
26 gauge	10%

## DAMPERS.

"Yankee" Hot Air.	
7 inch, each 20c, doz.	\$1 75
8 " " 25c, " "	2 40
9 " " 30c, " "	2 75
10 " " 32c, " "	3 00

## Smoke Pipe.

7 inch, each	\$ 35
8 " " "	40
9 " " "	50
10 " " "	60
12 " " "	90

## Reversible Check.

8 inch, each	\$1 50
9 " " "	1 70

## DIGGERS.

Post Hole.	
Iwan's Split Handle (Eureka)	
4-ft. Handle, per doz.	\$14 00
7-ft. Handle, per doz.	36 00
Iwan's Hercules pattern, per doz.	14 90

## DRILLS.

V. & B. Star, 12-inch Length.	
1/4, 5/16 and 3/8, each	\$ 25
1/2, each	36
1, each	54
1 1/4, each	81

## V. & B. Star, 18-inch Length.

5/16 and 3/8, each	\$ 33
1/2, each	45
1, each	69
1 1/4, each	1 05

## EAVES TROUGH.

Milcor	
Galv. Crimpedge, crated	75%

## ELBOWS—Conductor Pipe.

Milcor	
Galv. plain or corrugated, round flat.	
Crimp, Std. gauge	65%
26 Gauge	40%
24 Gauge	10%

## Square Corrugated.

Milcor	
Standard gauge	50%
26 gauge	30%

## Port



Made in nine sizes

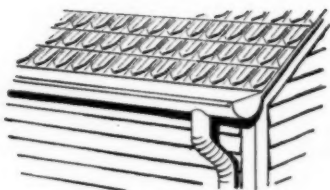
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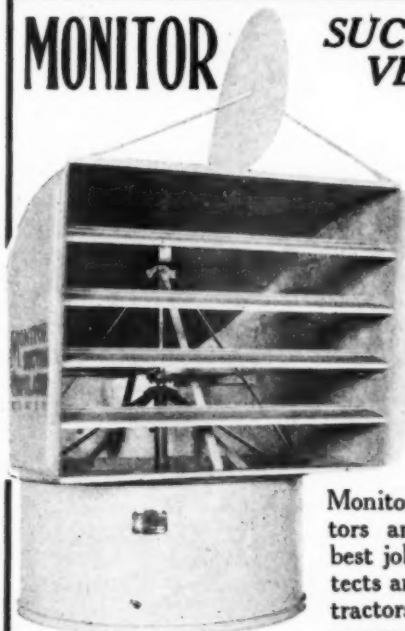
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### SUCTION VENTILATOR



Made  
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Galvanized  
Copper  
Steel

Heavily  
Reinforced

Fully  
Guaranteed

Monitor Suction Ventilators are specified on the best jobs by leading architects and sheet metal contractors are making good money selling them. You are sure of a profit when you sell Monitor Ventilators.

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### LICHTY METAL PRODUCTS COMPANY

*Manufacturers*

WATERLOO, IOWA

Uniform, Collar Adjustable.	
5-inch	Doz. \$2 00
6-inch	Doz. 2 10
7-inch	Doz. 2 60
WOOD FACES—50% off list.	

FENCE.	
Field Fence	60 1/2 %
Lawn	63 %

FILES AND RASPS.	
Heller's (American)	60-10 %
American	60-10 %
Arcade	50 %
Black Diamond	40-10-5 %
Eagle	50 %
Great Western	50 %
Kearney & Foot	50 %
McClellan	50 %
Nicholson	50 %
Simonds	60 %

FIRE POTS.	
Ashton Mfg. Co.	
Complete line	
Firepots and Torches	52 %

Otto Bernz Co.	
No. 1 Furn. Gasoline with large shield, 1 gal.	\$ 6 75
No. 3 Furn. Kerosene, 1 gal.	15 12
No. 10 Brazier, Kerosene or Gasoline, 10 gals.	47 52
No. 5 Torch, Gasoline or Kerosene, 1 pt.	7 92
No. 83 Torch, Gasoline, 1 quart	5 40
No. 86 Torch, Gasoline, 1 pint	4 05

Clayton & Lambert's.	
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas	52 %
West of above boundary line	48 %

Geo. W. Diener Mfg. Co.	
No. 02 Gasoline Torch, 1 qt.	\$ 5 55
No. 0250, Kerosene or Gasoline Torch, 1 qt.	7 50
No. 10 Tinner's Furn.	12 60
Square tank, 1 gal.	12 60
No. 16 Tinner's Furn.	12 00
Round tank, 1 gal.	12 00
No. 21 Gas Soldering Furnace	3 60
No. 110 Automatic Gas Soldering Furnace	10 50

Double Blast Mfg. Co.	
Gasoline, Nos. 25 and 35	60 %
Quick Meal Stove Co.	
Vesuvius, F.O.B. St. Louis	30 %
(Extra Discet. for large quantities)	

Chas. A. Hones, Inc.	
Buzzer No. 1	\$ 9 00
" " 2	12 00
" " 22	13 50
" " 42	15 00
" " 43	19 00

FREEZERS—ICE CREAM.	
Peerless and Alaska	
1 quart	\$2 95
2 quart	3 45
3 quart	4 10
White Mountain	
1 quart	\$4 85
2 quart	5 65

GALVANIZED WARE.	
Pails (Competition), 8 qt.	\$1.85
10-qt.	2 10
12-qt.	2 30
14-qt.	2 57
Wash tubs, No. 1	\$6 00
No. 2	6 75
No. 3	8 00

GARAGE DOOR HARDWARE.	
Stanley	All net

GAUGES.	
Marking, Mortise, etc.	Nets
Wire.	
Disston's	25 %

GIMLETS.	
Discount	65 % and 10 %

GLASS.	
Single Strength, A and B.	
all sizes	83 & 85 %
Double Strength, A, all sizes	84 %

GREASE, AXLE.	
Frazers	
1-lb. tins, 36 to case, per case	\$ 4 70
3-lb. tins, 24 to case, per case	7 80
5-lb. tins, 12 to case, per case	7 20
10-lb. tins, per dozen	10 40
15-lb. tins, per dozen	13 80
25-lb. tins, per dozen	19 80

HAMMERS, HANDLED	
All V. and B.	Each, net
Blacksmiths' Hand, No. 0, 26-oz.	\$1.00
Engineers' No. 1, 28 oz.	1 00
Farrier's, No. 7, 7-oz.	93
Machinists', No. 1, 7-oz.	78

Nail.	
Vanadium, No. 41, 20-oz. each	1 59
Vanadium, No. 41 1/2, 16-oz. each	1 59
V. & B., No. 11 1/2, 16-oz. each	1 01
Garden City, No. 11 1/2, 16-oz., each	75
Tinner's Riveting, No. 1, 8-oz., each	79
Shoe, Steel, No. 1, 18-oz. each	65
Tack.	
Magnetic, No. 5, 4-oz., each	81

HAMMERS, HEAVY.	
Farrier's, No. 10, 10-oz.	\$1 01

HANDLES.	
Axe.	
Hickory, No. 1....per doz.	4 00
Hickory, No. 2....	3 00
1st quality, second growth	6 00
Special white, 2nd growth	5 00

Chisel.	
Hickory, Tanged, Firmer assorted	per doz. 55c
Hickory, Socket, Firmer, Assorted	per doz. 70c
File	per doz. \$1 20

Hammer and Hatchet.	
No. 1 per doz.	\$0 90
Second Growth hickory, per doz.	1 50

Soldering.	
Per doz.	\$2 40

HANGERS.	
Conductor Pipe.	
Milcor Perfection Wire	25 %

Eaves Trough.	
Steel hangers	30 %
Triple Twist wire	10 %
Milcor Eclipse Wire	20 %
Milcor Triplex Wire	15 %
Milcor Milwaukee Extension	15 %
Milcor Steel (galv. after forming) List plus	12 1/2 %
Milcor Selflock E. T. Wire, List plus	40 %

HASPS.	
Hinge, Wrought, with staples.	Net

HATCHETS.	
V. & B. Supersteel.	Each
Broad, No. 1, 24-oz.	\$1 43
Half, No. 1, 15-oz.	1 25
Half, No. 3, 27-oz.	1 37
Claw, No. 1, 19-oz.	1 31
Flooring, No. 1, 20 oz.	1 43
Shingling, No. 1, 17-oz.	1 20
Lathing, No. 1, 14-oz.	1 20
Lathing, No. 2, 17-oz.	1 25

Vanadium Steel.	
Half, No. 62, 22-oz.	\$1 82
Underhill Pattern Lathing, 9 row, 19-oz.	2 29

HINGES.	
Heavy Strap, in Bundles.	
4 inch, dozen prs.	\$1 26
5 " " "	1 74
6 " " "	2 12
8 " " "	3 54
Extra Heavy T in Bundles.	
4 inch, dozen prs.	\$1 90
5 " " "	2 01
6 " " "	2 52
8 " " "	4 30

HOES.	
Garden	net

HOOKS.	
Box.	
V. and B. No. 9, each	\$0 26
Conductor.	
"Direct Drive" Wrought Iron for wood or brick	15 %
Cotton.	
V. and B. No. 8, each	24
Hay.	
V. and B. No. 1, each	26

Bar Meat.	
V. and B. No. 26, 3/4", each	09
V. and B. No. 28, 1/2", each	16

Screw Meat.	
V. and B. No. 2, per gro.	6 50

Butchers' "S."	
V. and B. No. 6 each	08
V. and B. No. 8, each	11

HOSE.	
Per Ft.	
1/2-in. 2 ply molded	12c
3/4-in. cord	8 1/2 c to 10c
1-in. wrapped	14c

HUMIDIFIERS.	
"Front-Rank," Automatic.	
In single lots	50 %
In lots of 10 or more	50-5 %
In lots of 25 or more	50-10 %
Vapor pans, etc., each	50 %

IRONS.	
Sad.	
Genuine Mrs. Potts, nickel plated, per set	\$1 55
Asbestos No. 70, per set.	2 10
Asbestos No. 100, per set.	2 30
E. C. Stearns'.	
No. OA Corner, doz. sets	\$2 50
No. OB	2 75

KNIVES.	
Butcher.	
Beechwood Handles, 6-inch blade	25 %
Beechwood Handle, 7-inch blade	25 %
Beechwood Handles, 3-inch blade	25 %
Cooper's Hoop	25 %

Drawing.	
Standard	25 %
Adjustable	25 %
Barton's Carpenters'	25 %

Hay.	
Iwan's Solid Socket	25 %
Heath's	25 %
Iwan's Sickle Edge	25 %
Iwan's Imp'd Serrated	25 %

Hedge.	
Challenge	25 %
Disston's No. 1	25 %

Putty.	
Common	25 %
Lander's	25 %

Scraping.	
Beech Handles	25 %
Lander's	25 %

DOOR.	
Mineral	per doz. \$2 00
Porcelain	" 2 00
Jet	" 2 00

LADDERS.	
Step.	
Common, per ft.	28c
Common, with Shelf, add 10c	
IXL	34c
Challenge, 6 to 9 ft.	55c
10 to 16 ft.	60c
Kant-Break, per lineal ft.	75c

LANTERNS.	
Per doz.	
Monarch tin, hot blast	\$ 8 25
Dietz No. 2 cold blast	13 00
Best tubular	8 25
Competition lanterns No. 0 tubular	6 90

LAWN MOWERS.	
12-inch	\$5 20
16-inch	5 85
Ball Bearing.	
4 blade, adjustable bearing.	
14"	\$5 20
16"	7 80

LEATHER BELTING.	
From No. 1 Oak Tanned Butts.	
Extra heavy, 18-oz.	35 %
Heavy, 16-oz.	40 %
Medium, 14 1/2-oz.	40 %
Light, 13-oz.	50 %
LEATHER LACING.	
Cut, strictly No. 1	45 %

LEVELS.	
Disston, No. 28 Asst.	\$22 85
" No. 18, 20 in., each	1 33
" No. 22, 24 in., each	2 40
" Shafting, 6 in.	19 80
" " 6 in. gr. glass	24 20
" No. 1 Asst.	5 75
" No. 2 Asst.	12 40
" 24-26 in., each	1 02
" 28-30 in., each	1 00

LIFTERS.	
Stove Cover.	
Coppered	per gro. \$6 00
Alaska	" 4 75

LOCKS.	
Barn Door.	
No. 60 Stearns'.	per doz. \$11 00
No. 80	" 20 00

MALLET.	
Carpenters'.	
Fibre Head No. 2, per doz.	\$12 00
" No. 3,	15 50
" No. 3 1/2,	20 50
Round Hickory, per doz.	\$3.00—5 00
Tinner's.	
Hickory	per doz. \$2 25

MATS.	
Door.	
National Rigid	5 & 10 & 5 %
Acme Steel Flexible	50 %

MITRES.	
Galvanized steel mitres, and caps, end pieces, outlets	30 %
Milcor	16 %
Galv. one piece stamped	40 %

MOPS.	
Cotton, Star (Cut Ends).	
Pounds 12' 15' 18' 24'-3-oz.	
Per doz. \$4 00 4 35 5 50 7 00	
Enterprise	16 %
Parker	50 & 5 %

NAILS.	
Cut Steel	\$4 70
Cut Iron	4 70
Wire.	
Common	3 80
Cement Coated	3 25

NETTING, POULTRY.	
Galvanized before weaving	45-10 %
Galvanized after weaving	45 %

NIPPERS.	
Nail Cutting.	
V. & B. No. 30	75c
Double Duty.	
V. & B. No. 60	76c
Hoof.	
Heller's	40 & 10 %
V. & B. No. 52, each	\$2 25

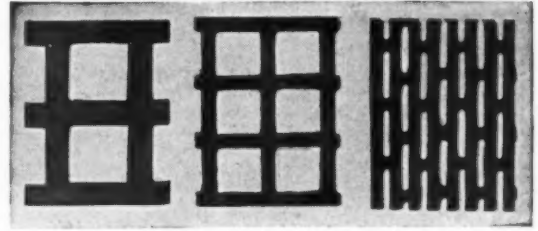
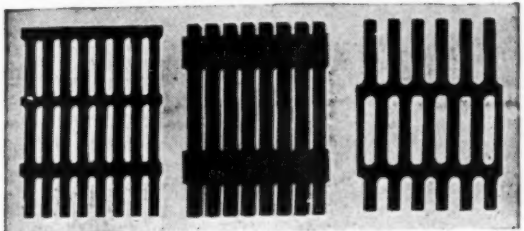
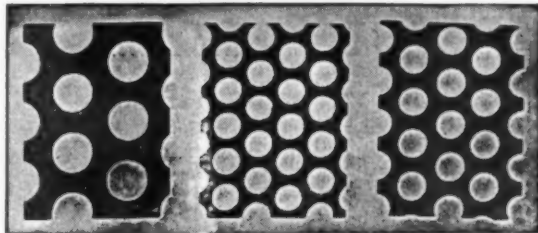
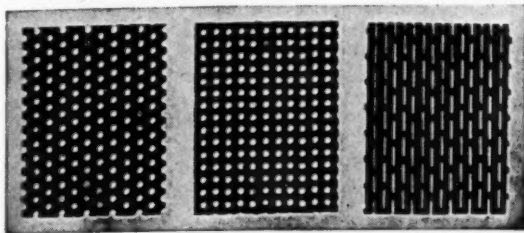
NOZZLES.	
Hose.	
Diamond	per doz. \$5 75
Magic	" 9 50

OILERS.	
Chase Pattern.	
Brass and Copper	10 %
Zinc Plated	40 & 5 %
Railroad.	
Brass	20 & 5 %
Coppered	50 & 5 %
Steel.	
Copper Plated	70 & 5 %

OPENERS.	
Delmonico	per doz. \$1 30
Never Slip	" 60
Crate.	
V. & B., per doz.	\$7 25—11 00



## PERFORATED METALS



*All Sizes and Shapes of Holes in all Kinds and Thicknesses of Metal.*

Punched Metal Grilles, Register Faces, Ventilators, etc.  
Guard Material for Machines and Belts. We supply a complete line of Accessories  
Screens for Grain, Minerals or anything to be screened.

Perforated Tin and Brass always in stock

## THE HARRINGTON & KING PERFORATING CO.

5649 FILLMORE STREET, CHICAGO, ILLINOIS, U. S. A.

New York Office: 114 Liberty Street

### Quality & Beauty IN ART METAL CEILINGS AND SIDE WALLS

**QUALITY**—only first quality material is used in making  
FRIEDLEY-VOSHARDT ART METAL CEILINGS AND  
SIDE WALLS.

**BEAUTY**—is necessary for the complete and lasting satisfaction of your customers.

Having one of the finest equipped sheet metal plants in the country and employing only skilled workers enables us to serve you with **QUALITY** goods having the **BEST** **DESIGNS**.

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FACTORY  
761-771 Mather St.  
CHICAGO, ILLINOIS

### PATTERNS—CHARTS

Elbow Patterns, Patterns for complete line of Tinware, Skylight Patterns and Block Letter and Figuring Patterns, Furnace Boot, Ventilator, Register Box, Liquid Measure and other Patterns, all listed and described in our 10-page book catalog.

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630 South Michigan Avenue Chicago, Ill.

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Write for Prices and  
Illustrations

### Gerock Bros. Mfg. Co.

Sheet Metal Ornaments  
and  
STATUARY

1252 So. Vandeventer Ave'

St. Louis, Mo., U. S. A.



### EARLE'S VENTILATOR

IMPROVED  
REVOLVING



Write  
to-  
day  
for  
complete  
catalog

It runs in a self-lubricating bearing that is not affected by heat or cold. It is noiseless and produces an upward current of air. No down draft. It will satisfy and give you a good profit.

### BERGER BROS. CO.

229 to 237 ARCH STREET

WAREROOMS AND FACTORY: 100 TO 114 BREAD STREET  
PHILADELPHIA, PA.

**FAILS.**

<b>Cream.</b>	
14-qt., with gauge,	
.....per doz. \$9 50	
18-qt., without gauge,	
.....per doz. 11 00	
20-qt., without gauge,	
.....per doz. 11 75	

<b>Sap.</b>	
10-qt., IC Tin....per doz. \$4 00	
12-qt., " " " " " " 5 50	

<b>Stock.</b>	
Galv. qts. 14 16 18 20	
Per doz. \$9 75 10 75 12 75 14 50	

<b>Water.</b>	
Galvanized qts. 10 12 14	
Per doz. \$5 75 6 50 7 25	

**PASTE.**

<b>Asbestos Dry Paste:</b>	
200-lb. barrel.....\$15 00	
100-lb. barrel.....8 00	
35-lb. pail.....3 25	
10-lb. bag.....1 00	
5-lb. bag.....55	
2½-lb. cartons.....30	

**PINCERS.**

<b>All V. and B.</b>	
Carpenters', cast steel,	
No. 6 8 10 12	
Each \$0 43 \$0 52 \$0 61 \$0 71	
Blacksmiths', No. 10.....\$0 64	

**PIPE.**

<b>Conductor.</b>	
"Interlock" Galvanized.	
Crated and nested (all	
gauges).....60-20%	
Crated and not nested	
(all gauges).....60-15%	
Square Corrugated A and B and	
Octagon.	
29 gauge.....60-10%	
28 ".....60-10%	
26 ".....60-10%	
24 ".....60-10%	

"Interlock."	
Crated and nested (all	
gauges).....60-20%	
Prices for Galvanized Toncan	
Metal, Genuine O. H. Iron, Lyon-	
more Metal and Keystone C. B.	
on application.	

<b>Stove.</b>	Per 100 joints
26 gauge, 6 inch E. C.	
nested.....	17 00
26 gauge, 7 inch E. C.	
nested.....	19 00
28 gauge, 5 inch E. C.	
nested.....	14 00
28 gauge, 6 inch E. C.	
nested.....	15 00
28 gauge, 7 inch E. C.	
nested.....	17 00
30 gauge, 5 inch E. C.	
nested.....	12 00
30 gauge, 6 inch E. C.	
nested.....	13 00
30 gauge, 7 inch E. C.	
nested.....	15 00

<b>T-Joint Made up</b>	
6-inch, 28 ga. ....per 100	32 50

<b>Furnace Pipe.</b>	
Double Wall Pipe and	
Fittings.....40-10%	
Single Wall Pipe, Round	
Pipe Fittings.....40-10%	
Galvanized and Black	
Iron Pipe, Shoes, etc.....40-10%	
Milcor Galvanized.....40%	
<b>Lead.</b>	
Per 100 lbs.....\$12 60	

**PLANES.**

Stanley Iron Bench.....Net	
----------------------------	--

**PLIERS.**

<b>(V. &amp; B.)</b>	
Nut, No. 3, each.....\$2 60	
" No. 5, each.....64	
" No. 25, each.....69	
<b>Gas,</b> No. 7, each.....55	
" No. 8, each.....61	
" No. 12, each.....87	

<b>Lining or Crimping.</b>	
No. 35, each.....64	

<b>Button's Pattern.</b>	
No. 6 each.....61	
No. 8 each.....74	

<b>Double Duty, No. 106.....</b>	50
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**POINTS, GLAZIERS'.**

No. 1, 2 and 3..per doz. pkgs. 65c	
------------------------------------	--

**POKERS, STOVE.**

Wrt Steel, str't or bent,	
.....per doz. \$0 75	
Nickel Plated, coll	
handles.....1 10	

**POKERS, FURNACE.**

Each.....\$0 50	
-----------------	--

**PULLEYS.**

Furnace Tackle....per doz. \$0 60	
per gross.....6 00	
" Screw (en-	
cased)....per doz. \$0 85	

<b>Ventilating Register.</b>	
Per gross.....\$9 00	
Small, per pair.....0 30	
Large, per pair.....0 50	

**PUNCHES.**

<b>Machine.</b>	Each
V. & B. No. 11-13, 1½x6..\$0 19	
V. & B. No. 90, ¾x9.....27	
V. & B. No. 10, ¾x10.....29	
V. & B. No. 1-6, ½x6.....12	

<b>Center.</b>	
V. & B. No. 50, ¾x4....\$0 14	

<b>Belt.</b>	
V. & B. No. 101-103.....\$0 24	
V. & B. No. 25, ass't.....3 80	
V. & B. No. 25, ass't.....3 80	

**Samson Line.**

No. 1 Hand	Doz. lots or less.....40%
No. 2 Hand	3 doz. lots.....Less 40 & 5%
No. 4 Hand	6 doz. lots or more.....Less 50%

No. 3 Bench	Less than doz. lots.....Less 25%
	Doz. lots or more.....Less 40%

**Extra Punches and Dies for Samson:**

No. 1 Hand	Less than doz. lots.....Less 25%
No. 2 Hand	Doz. lots.....Less 33½%
No. 4 Hand	3 doz. lots.....Less 40%
No. 3 Bench	6 doz. lots or more.....Less 40 & 10%

**PUTTY.**

Commercial Putty, 100-lb. kits.....\$3 55	
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**QUADRANTS.**

Malleable Iron Damper.....10%	
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**FLOOR REGISTERS AND BORDERS.**

Cast Iron.....25%	
Steel and Semi-Steel.....40%	
Baseboard.....40%	
Adjustable Ceiling Ventilators.....40%	
<b>Register Faces—Cast and Steel.</b>	
Japanned, Bronzed and Plated,	
4x6 to 14x14.....40%	
Large Register Faces—Cast,	
14x14 to 38x42.....60%	
Large Register Faces—Steel,	
14x14 to 38x42.....65%	

**ROOFING.**

Best grade, slate surf. prep'd\$2 00	
Best talc surfaced.....2 35	
Medium talc surfaced.....1 65	
Light talc surfaced.....1 05	
Red Rosin Sheeting, per ton.70 00	

**ROPE.**

<b>Cotton.</b>	
<b>Sisal.</b>	
1st Quality, base...14½ to 16½c	
No. 3.....13½ to 15½c	
<b>Manila.</b>	
1st Quality standard	
brands.....17½ to 19½c	
No. 2.....16½ to 18½c	
Hardware Grade, per lb....14½c	

**SAWS.**

<b>Butchers'.</b>	
Atkins No. 2, 14-in.....\$12 75	
" No. 2, 18-in.....14 30	
" No. 7, 16-in.....15 85	
" No. 2, 22-in.....15 92	
" No. 7, 20-in.....18 05	
" No. 7, 24-in.....20 20	
" No. 7, 28-in.....22 35	

<b>Compass.</b>	
Atkins No. 2, 10-in.....\$ 5 45	
" No. 10, 10-in.....5 60	
" Blades, No. 2, 10-in. 3 25	
" " No. 2, 10-in. 3 30	

<b>Cross-Cut.</b>	
Atkins No. 221, 4-ft.....\$3 03	
" No. 221, 6-ft.....4 45	
" No. 221, 8-ft.....6 07	

<b>Hand.</b>	
Copper Burrs only.....40%	
" No. 96, 20 in.....21 70	

<b>Hand and Rip.</b>	
Atkins No. 54, 20-in.....\$19 50	
" No. 54, 26-in.....24 40	
" No. 53, 16-in.....18 10	
" No. 53, 20-in.....22 90	
" No. 53, 24-in.....26 60	
" No. 53, 28-in.....31 45	
" No. 53, 30-in.....34 15	

<b>Keyhole.</b>	
Atkins No. 1 complete....\$3 10	
" No. 2 complete....3 70	

<b>Miter Box.</b>	
Atkins No. 1, 4x20.....\$32 65	
" No. 1, 5x22.....33 00	
" No. 1, 6x22.....42 20	

<b>Pruning.</b>	
Atkins No. 20, 12-in.....\$ 8 45	
" No. 10, 16-in.....18 15	

<b>Wood.</b>	
Atkins No. 202.....\$ 7 19	
" No. 318.....8 75	
" No. 906.....15 50	
" No. 1509.....16 56	

**SCRAPERS.**

<b>Box.</b>	
No. 6, six blade each.....25c	
<b>Hog.</b>	
No. 6, each.....25c	
<b>Floor (Stearns).</b>	
No. 10, each.....\$11 50	

**SCREEN DOOR HINGES**

Cast Iron.....gross \$13 00	
Steel.....9 50	

**SCREWS.**

<b>Wood.</b>	
F. H. Bright.....80%	
R. H. Blued.....78%	
F. H. Jap'd.....74%	
F. H. Brass.....76%	
R. H. Brass.....74%	
<b>Sheet Metal.</b>	
No. 7, ½x½, per gross....\$0 55	
No. 10, ¾x3/16, per gross 75	
No. 14, ¾x¼, per gross... 90	

**SCREW DRIVERS.**

<b>Uncle Sam Standard Head.</b>	
2 inches, each.....\$ 45	
5 inches, each.....52	
8 inches, each.....68	
12 inches, each.....1 02	
<b>Uncle Sam Insulated Head.</b>	
3 inches, each.....\$ 49	
5 inches, each.....57	
8 inches, each.....76	
12 inches, each.....1 14	

**SETS.**

<b>Nail.</b>	
V. & B.	
No. 100, in cardboard	
boxes.....doz. \$1 55	
No. 100, in wooden boxes,	
Doz. 1 58	
No. 30, assorted.....doz. 39	
No. 5, in cardboard boxes,	
doz. 1 25	
No. 5, in wooden boxes,	
doz. 1 30	

**Rivet.**

<b>Farmers'</b>	
Tinners' 3-4.....\$0 15	
" " " " " " 0 40	
" " " " " " 0 40	
<b>Saw.</b>	
Atkins No. 10....per doz.\$3 80	
" No. 12.....6 30	

**SHEARS.**

<b>Nickel Plated, Straight,</b>	Per Doz.
" " " " " " 6" \$12 30	
" " " " " " 7" 14 45	
" " " " " " 8" 16 30	
<b>Japanned, Straight.....6" 11 00</b>	
" " " " " " 7" 12 40	
" " " " " " 8" 13 30	

**SHEARS, TINNERS' & MACHINISTS'.**

Viking.....\$22 00	
--------------------	--

**Lennox Throatless.**

No. 18.....35%	
Shear blades.....10%	
(f. o. b. Marshalltown, Iowa.)	

**Peerless Steel Squaring.**

<b>Foot Power.</b>	
No. 1—30", 18 ga. cap....15%	
No. 2—36", 18 ga. cap....15%	
No. 4—52", 18 ga. cap....15%	
No. 10—120", 22 ga. cap....15%	
No. 4A—52", 16 ga. cap....15%	

**Cast Iron Foot Power.**

No. 01, 30", 18 ga. cap....15%	
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**Power Driven.**

(No. 100 Series, 2 Shaft Drive.)	
No. 142—42", 18 ga. cap....15%	
(No. 200 Series, 2 Shaft Under-	
neath Drive.)	
No. 242—42", 14 ga. cap....15%	
(No. 300 Series, 3 Shaft Under-	
neath Drive.)	
No. 342—42", 10 ga. cap....15%	
No. 372—72", 10 ga. cap....15%	
(No. 500 Series, 3 Shaft Under-	
neath Drive.)	
No. 596—96", 10 ga. cap....15%	
No. 600 Series, 3 Shaft Under-	
neath Drive.)	
No. 6120—120", 3/16" cap....15%	

**SHOES.**

<b>Milcor.</b>	
Galv. Std. Gauge, Plain or	
corr. round flat crimp....65%	
26 gauge round flat crimp....40%	
24 gauge round flat crimp....10%	
Conductor.....65%	

**SHOVELS AND SPADES.**

<b>Coal.</b>	
Hubbard's.	
No. A B C D	
1 \$16 00 15 10 14 45 13 70	
2 16 35 15 60 14 85 14 10	
3 16 75 16 00 16 25 14 40	
4 17 10 16 35 16 60 14 85	

**Post Drains & Ditching.**

Hubbard's.	
Size A B C	
14".....\$17 15 \$16 40 \$15 65	
16".....17 50 16 75 16 00	
18".....17 85 17 10 16 85	
20".....18 20 17 45 16 70	
22".....18 55 17 80 17 05	

**Alaska Steel.**

D-Handle.....per doz. \$3 50	
Long Handle.....3 00	

**SIFTERS.**

Genuine Hunters, doz.....\$2 50	
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**SKATES.**

<b>Ice, Men's and Boys'.</b>	Per Pair
Key Clamp—rocker—bright	
finish.....\$ 76	
Key Clamp—rocker—nickel	
finish.....1 10	
Key Clamp—rocker—pol-	
steel.....1 30	
Key Clamp—rocker—pol-	
Skate outfits.....4 75	

**Women's and Girls'.**

½" Key Clamp—rocker....\$1 31	
hockey.....1 00	
Ice Skate outfit.....5 30	

**Roller.**

Ball Bearing—Boys'.....\$1 45	
Copper Burrs only.....30%	
Ball Bearing—Girls'.....1 65	